RESEARCH ARTICLE

Mothers' adherence to optimal infant and young child feeding practices in Uganda: a cross-sectional study [version 1; peer review: 3 not approved]

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Abstract

Background: The benefits of adherence to optimal infant and young child feeding (IYCF) to both the mothers and their infants below two years are well documented. However, compliance to optimal IYCF practices has been noted to vary in different settings. This study sought to establish factors influencing mothers' adherence to optimal infant and young child feeding practices for babies below two years in Mpigi town council- Mpigi District.

Methods: The study was a cross-sectional study carried out among 264 mothers of babies between six months to two years of age attending postnatal care units of health facilities in Mpigi town council, Uganda: Mpigi Health Center (HC) IV and Kyaali HC III. Purposive sampling method was used to select the health centers while simple random sampling was then used to select the sample from the selected centers. A self-administered questionnaire was used to collect data. Data entry and analysis was performed using SPSS version 16.

Results: 264 participants were invited to participate in the study, 100% of these fully completed the survey. The majority of the mothers were aged 20 to 34 years (80.3%). After scoring each participant using the four characteristics which included: initiation of breastfeeding within the first hour following birth, exclusive breastfeeding up to 6 months followed by continued breastfeeding with appropriate complementary foods upto 2 years and beyond, the majority of the participants were adherent (79.6%) to IYCF practices while 20.4% were non adherent to IYCF practices.

Conclusion: A good estimate of adherence to optimal IYCF practices was revealed in this study. Sustaining well-established policies to support IYCF programmes is recommended to maintain optimal IYCF

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Any reports and responses or comments on the article can be found at the end of the article.

practices.

Keywords

Adherence, Mothers, Infant and Young Child Feeding, Uganda, Africa, Low and Middle-Income countries

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Introduction

Optimal Infant and Young Child Feeding (IYCF) is crucial for survival across the entire childhood continuum. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) have recommended initiation of exclusive breastfeeding from the time of birth up to 24 months of age¹. Optimal feeding of infants from 0 to 5 months has been associated with significantly lower risk of all-cause and related mortality compared to partial or not breastfeeding at all^{1,2}.

Estimates suggest that optimal IYCF practices could prevent approximately 12% of mortality in the under 5's annually. This accounts for about 800,000 lives in Low and Middle-Income Countries (LMICs)³.

Early initiation of optimal IYCF within the first hour following birth in the form of exclusive breastfeeding up to 6 months followed by continued breastfeeding for up to 2 years and beyond with appropriate complementary foods after completion of 6 months is the gold standard for optimal IYCF^{1,4}.

Sub-Saharan African countries have one of the highest prevalence of breastfeeding at one year, however only 37% of infants less than 6 months are exclusively breastfed^{3,5}. Various factors have been cited for the low optimal IYCF practices, including; socio-economic status^{6,7}, home births, culture and poorly implemented and monitored strategies of regulating the marketing of breast-milk substitutes, feeding bottles and teats⁶⁻¹⁰. Other cited factors to non-adherence to optimal IYCF include; education levels, health providers' practices and market pressures to use breast milk substitutes and other nutritional supplements^{3,11}.

The Uganda demographic and health survey¹² noted that only 63% of infants younger than six months are exclusively breast fed and complementary foods are not introduced in a timely fashion for all children; 33% of children under five are stunted, with only 6% of children aged 6–23 months being appropriately fed¹².

This study sought to establish the factors influencing mothers' adherence to optimal infant feeding practices for infants below the age of two years in Mpigi town council health facilities, Mpigi District, Uganda. Findings from this study provide country specific data on the extent of adherence to optimal IYCF practices. Such evidence is seminal to policy makers to sustain IYCF policies and programmes.

Methods

Study design and setting

This was a cross-sectional study carried out among mothers attending postnatal care units of health facilities in Mpigi town council, Uganda from May 2016 to August 2016. Mpigi district is located in the Central region of Uganda, 32 Kilometers West of Kampala Capital City along Masaka road. The study was conducted in two health centers: Mpigi Health Center (HC) IV and Kyaali HC III. Mpigi HC IV is the largest health facility in Mpigi District.

Sampling procedure

Mixed sampling methods were used. Purposive sampling was used to select the health centers. Simple random sampling was then

used to select the sample from the selected centers. Mothers and caretakers of babies six months to two years of age were included in the study while as those who were participating in interventional breastfeeding studies were excluded from the study.

Data collection methods

Data was collected using a structured questionnaire (Supplementary File 1¹³). The questionnaire was developed through literature review. The tool consisted of three sections; section one assess socio-demographic data, section two assessed maternal and infant data, while section three assessed Healthcare related data. The tool was validated by 5 experts. The tool was pre-tested at Mulago National referral Hospital before data collection. The questionnaires were administered by research assistants to participants during Young Child Clinics (YCC) days at the selected centers. Data collection was carried out as the mothers waited to see the Healthcare providers in the queues.

Measuring adherence to optimal infant feeding

We defined optimal infant feeding as initiation of optimal IYCF within the first hour following birth in the form of exclusive breastfeeding up to 6 months followed by continued breastfeeding for up to 2 years and beyond with appropriate complementary foods after completion of 6 months is the gold standard for optimal IYCF^{1,4}.

We established a scale to assess IYCF using four questions that cover the definition of IYCF, these included: (i) Breastfed within the first hour after delivery (ii) Were you able to breastfeed up to 6 months? (iii) Continue to breastfeed after introducing others foods to baby and (iv) for how long? For question i, ii and iii, option yes was score 1 while option no was scored zero. For question 5, option (a) was scored 1, option two was scored 2 while option three was scored 3 (Table 2). This led to a maximum adherence range of 6 and a minimum of 0. Adherence was then categorized into “non-adherence” and “adherence” subscales. Non-adherence ranged from 0 to 2 while adherence ranged from 3 to 6.

Data processing and analysis

The data was entered, cleaned and analyzed by SPSS version 16.0 statistical packages. Descriptive summary statistics were used to describe the respondents' characteristics while appropriate statistical analysis was performed to assess the factors associated with adherence to infant feeding.

Results

264 participants were invited to participate in the study, 100% of these fully completed the survey.

Socio-demographic characteristics of the participants

Majority of the mothers were aged 20 to 34 years (80.3%). Most of the mothers had at least 1 to 3 children (70.8) (Table 1) and had currently delivered female babies compared to male ones. The most common level of education attained by the mothers was primary education. With regards to occupation and average monthly income, most mothers were housewives (63.3%) and earned an average monthly income of 100,000 to 300,000 Uganda Shillings (equivalent to \$26 to \$78 at time of publication) (Table 1).

Table 1. Socio-demographic characteristics (n=264).

Characteristics		Frequency	Percentage	p-value
Age of mothers	15 to 19	33	12.5	<0.01
	20–34	212	80.3	
	> 35	19	7.2	
Number of children	1 to 3	187	70.8	0.23
	>3	77	29.2	
Sex of infant	Male	122	46.2	<0.01
	Female	142	53.8	
Mothers' level of education	Primary	129	48.9	<0.01
	Secondary	109	41.3	
	Tertiary	26	9.8	
Occupation of mother	Peasant farmer	39	14.8	<0.01
	House Wife	167	63.3	
	Civil Servant	26	9.8	
	Business Woman	32	12.1	
Average monthly income of the family in Uganda Shillings	<100,000	89	33.7	<0.01
	100,000 to 300,000	134	50.8	
	>300,000	41	15.5	
Religion	Muslim	49	18.6	0.34
	Catholic	103	39	
	Protestant	99	37.5	
	Adventist	13	4.9	
Religion encourages BF	Yes	264	100	
Marital status	Married	172	65.2	0.75
	Single	78	29.5	
	Separated	14	5.3	
Husband's opinion on breastfeeding	Encouraging	188	71.2	0.46
	Discouraging	6	2.3	
	Don't know	70	26.5	
Kind of support from community members	Positioning of baby	13	4.9	0.27
	Information on BF	26	9.8	
	Preparing feeds	33	12.5	
	Providing balanced diet	13	4.9	
	None	179	61.2	

Source: primary data. BF: Breastfeeding

Table 2. Adherence to IYCF.

Characteristics	Attributes	Frequency	Percentage
Breastfed within the first hour after delivery	Yes	188	71.2
	No	76	28.8
Were you able to breast upto 6 months?	Yes	213	80.7
	No	51	19.3
Continue to breastfeed after introducing others foods to baby	Yes	251	95.1
	No	13	4.9
If yes, how long	for less than 1 year	13	4.9
	for one year	148	61
	2 years and beyond	90	34.1

Source: primary data

Adherence to IYCF practices

Practices that reflect mother's adherence to IYCF are shown in Table 2 below. The majority of the mothers (71.2%) reported that they initiated breastfeeding within the first hour following delivery. Most mothers (80.7%) also reported that they were able to breastfeed upto 6 months (Table 2).

Regarding breastfeeding alongside complementary feeding after six months, almost all mothers (95.1%) reported that they were able to continue breastfeeding with complementary feeding after six months. Among those that were able to do so (n=251), the majority reported that they were able to breastfeed alongside complementary feeding upto one year (61%), followed by those who reported they were able to breastfeed alongside complementary feeding for two years and beyond.

After scoring each participant using the four characteristics in Table 2, the majority of the participants were adherent (n=210, 79.6%) to IYCF practices while 54 (20.4%) were non-adherent to IYCF practices (Table 2).

Maternal related characteristics of the respondents

The majority of the mothers reported that they were healthy during the antenatal care visits (ANC) period (61%). Reasons reported to enable those who embraced optimal IYCF practices included; had plenty of breast milk (63.5%), enough time with the baby (14.2%) and encouragement from HCWs (22.3%). Those who were unable to abide by optimal IYCF practices (21.6%) reported reasons such as lack of optimal breast milk production (68.7%) and plenty of cow's milks (31.3%) (Table 3).

Table 3. Maternal related characteristics of the respondents (n=264).

Characteristics	Attributes	Frequency	Percentage	p-value
Health status during pregnancy	HIV positive Sickly Healthy	71 32 161	26.9 12.1 61	<0.01
What enable you to breastfeed (n=188)*	Plenty of breast milk Enough time with baby Encouragement from HCWs	129 19 39	69 10.2 20.9	0.32
What disable you from breast feeding (n=76)*	Lack of breast milk Was in pain	56 20	73.7 26.3	0.53
What is the right age for introducing other food to baby	3 to 5 months 4 to 6 months 6 months >6 months	39 32 142 50	14.8 12.1 54.2 18.9	<0.05
Benefits of optimal IYCF	Immunity for the baby Bonding Proper growth and development Protects mother from OC	110 6 135 13	41.7 2.4 51.1 4.9	<0.05
Do you know how to prepare nutritious foods for the baby	yes no	90 174	34.1 65.9	<0.05
Reasons for failure to prepare nutritious feeds for the baby (n=174)*	I don't know how to prepare it lack of resources baby dislike it	162 6 6	93.1 3.4 3.4	0.85
Is first milk from mother nutritious	Yes Don't know	251 13	95.1 4.9	0.21
Is it possible for a mother to breastfeed upto 2 years?	Yes No	141 123	53.4 46.6	0.08
If no, why?	Fear of sagging breasts Work demand Health conditions Baby will refuse to eat food	55 29 39 10	40.9 17.3 35.5 6.4	0.30
If yes, why?	Nitrous For proper growth	58 32	64.4 35.6	0.42
If no, why?	I don't know how to prepare it Lack of resources Baby dislike it	162 6 6	93.1 3.4 3.4	0.94
How many times in a day do you feed a baby on solid or semi solid foods	2 3 to 4	226 38	85.6 14.4	0.47

OC: Ovarian Cancer; HCWs: Healthcare Worker

Regarding awareness on the time for introduction of complementary feeding, less than a third of the mother reported the optimum ITCF time for starting complementary feeding. Various benefits of optimal IYCF were reported by the respondents, these include; immunity for the baby, proper growth and development, bonding, protection of the mother from ovarian cancer (Table 3). Most mothers reported that it is possible to breastfeed up to 2 years while most mothers were not aware of how to prepare nutritious complementary food for the baby after 6 months. Reasons for failure to prepare nutritious food for the babies include; lack of awareness on how to prepare foods for the baby, lack of resources and some mothers reported that often the babies dislike the food (Table 3).

Health care provider practices

All mothers reported that they attended ANC. Information received during ANC visits include; positioning of the baby during breastfeeding, benefits of breastfeeding, how to feed an infant using a cup, importance of Colostrum and time of initiating breastfeeding. Majority of the mothers (53.4%) reported that they did not received practical demonstration during ANC visits. Different forms of support were reported to have been received immediately after birth. These include; initiating breastfeeding within one hour (40.1%), positioning of the newborn during breastfeeding and expressing of breast milk. Mothers reported that they received various health education talks during YCC visits, these included talks on; exclusive breast feeding, duration of breastfeeding and complementary feeding, and the benefits of breastfeeding (Table 4).

At bivariate analysis, age, number of children, sex of the infant, mothers level of education, occupation and average monthly income were significantly associated with optimal infant feeding ($P < 0.05$) (Table 1).

Maternal characteristics such as health status during labor, situations that enable mothers to breastfeed during first hour following delivery, perception of importance of first breast milk, awareness of the right age to introduce feeds, perceived benefits of breastfeeding, and knowing how many times in a day a baby is supposed to breastfeed were significant predictors of adherence to optimal infant feeding ($P < 0.05$) (Table 3).

Health care related characteristics such as information received on infant feeding during ANC, the kind of information received, practical support received during ANC and counseling of mothers on infant feeding during ANC visits were significant determinants of adherence to optimal infant feeding ($p < 0.05$). While receiving practical support was not significantly associated with optimal feeding ($p = 0.998$) (Table 4).

Multivariate analysis was performed to determine independent predictors of adherence to optimal IYCF. It was revealed that the age of the mother, level of education, average monthly of the family, health condition of the mother during pregnancy, awareness of the right age to introduce complementary food and having received information on IYCF during ANC visits were independent predictors of adherence to optimal IYCF practices.

Table 4. Health care related practices reported by the mothers.

Characteristics		Frequency	Percentage	p-value
Received information on IYCF during ANC visits	Yes	160	60.6	0.002
	No	78	29.6	
	Don't Know	26	9.8	
Information received during ANC Visits	Positioning of the baby	6	2.3	0.000
	Benefits of BF	109	41.3	
	How to feed using a cup	26	9.8	
	Importance of Colostrum	26	9.8	
	Time of initiating BF	96	36.7	
Receive practical demonstrations during ANC Visits	Yes	123	46.6	0.998
	No	141	53.4	
Form of practical support received immediately after birth	Initiation of BF	65	40.1	0.52
	Breastfeeding Position	71	43.8	
	Expressing breast milk	26	16.4	
Health talks during YCC clinics	Exclusive breast feeding	13	15.3	<0.01
	Duration of BF and CF and Complementary feeding	33	38.8	
	Benefits of BF	39	45.9	

Source: primary data. BF: Breastfeeding. CF: Complementary feeding

Discussion

In this study, majority of the participants were adherent (79.6%) to IYCF practices while 20.4% were non-adherent to IYCF practices. This could be attributed to well-established strategies facilitating optimal IYCF in Uganda. Indeed, numerous campaigns and policies are in place in support of optimal IYCF in Uganda. These include, but are not limited to, activities involving frontline healthcare providers such as nurses and midwives and ANC services. Optimal IYCF was reflected by assessing practices reflecting IYCF practices such as: breastfed within the first hour after delivery, ability to exclusively breastfeed upto 6 months, continue to breastfeed after introducing others foods to baby and recommended duration of breastfeeding post introduction of complementary feeding¹⁴. This is also in line with the WHO published set of population-level IYCF indicators of appropriate feeding practices in children ages 6–23 months¹.

Infant feeding practices in this study were appropriate with regards to the WHO criteria for optimal IYCF practices. This finding is contrary to that reported in a study in Kenya in Urban informal settlements in Nairobi that reported inappropriate IYCF practices¹¹. Optimal IYCF practices such as breast feeding have been reported to be high in Uganda compared to other Sub-Saharan African Countries like Nigeria and Niger⁹. This finding supports the findings of this study of a good estimate of optimal IYCF practices. There were significantly more mothers who reported to have initiated BF within an hour compared to less than half reported in a similar study in India¹⁵.

In context of characteristics of the sample, socio-demographic and economic characteristics of the participants in this study were similar to those reported from the recent population census in Uganda¹². This makes our findings generalizable to the entire population with minimal limitations. The majority of the mothers were aged 20 to 34 years, this is attributed to the fact that majority of the reproductive population in Uganda lies within this age group. Most of the mothers had at least 1 to 3 children. This finding is in line with the fertility rate reported in Uganda, owing to the fact that on average, each mother in Uganda has on average up to 7 children. There were comparatively more female babies compared to male ones, this is in line to the female to male ratios reported in the recent population of Uganda. The most common level of education attained by the mothers was primary education. Indeed, it has been estimated that at least majority of the Ugandan population has attained primary education¹². With regards to occupation and average monthly income; most mothers were housewives and earned an average monthly income of 100,000 to 300,000 Uganda Shillings. This is in line with the economic characteristics of majority of the Ugandan population revealed in the recent census.

The reported breast feeding rate in this study is higher than that reported in World Breastfeeding Initiative: Uganda Assessment Report that showed that 40% of the children under 6 months of age have not been exclusively breastfed and only 52.5% were breastfed within an hour of birth.

Reasons reported to enable those who embraced initiation of BF with the first hour included; had plenty of breast milk production,

enough time with the baby and encouragement from HCWs. Indeed, strong individual champions such as HCWs who encourage IYCF such as initiating BF in the first hour have been reported elsewhere as catalysts to optimal IYCF practices^{14,16}. Engagement of the mother by providing enough time with the baby would in turn stimulate milk production. This could in part solve the problem of lack of breast milk production which was one of the barriers to initiating BF in the first hour. In addition, controlling for pain after delivery could go a long way in giving mothers more comfort post-delivery so that they could start enjoying happy times with the new born.

In context of initiating complementary feeding, few mothers in this study were aware of the right timing. Emphasis on the right timing and preparation of complementary feeds during ANC and PNC visits needs to be hastened in facility and community based programmes. Awareness of the benefits of BF was significant in this study.

Attendance of ANC was overwhelmingly high in this study. This could be attributed to programmes such as the Baby Friendly Hospital Initiative (See [World Breastfeeding Trends Initiative, Uganda Report 2015](#)). However; practical demonstrations need to be incorporated in the ANC visits. The majority of the mothers reported that they did not received practical demonstration during ANC visits. These could improve feeding behaviors of mothers and in turn sustain optimal IYCF practices upto a recommended time.

Correlates to adherence to optimal IYCF included socio-demographic factors such as; age of the mother, level of education and average monthly income of the family. A similar study that assessed the impact of Socio-demographic and health service factors on breastfeeding in SSA using demographic health survey data reported that educational attainment was a significant predictor of IYCF practices such as exclusive breast feeding⁸. Health condition of the mother during pregnancy, awareness of the right age to introduce complementary food and having received information on IYCF during ANC visits were independent predictors of adherence to optimal IYCF practices. We argue that to promote and sustain IYCF practices, it is imperative to create public awareness about appropriate complementary feeding, its timing and providing IYCF counseling support systems for mothers.

Limitations of the study

While as this study presents important information on the extent of adherence to IYCF practices in Uganda, the data was obtained using self-report from the mothers. Such information gained from self-report is liable to bias as we cannot ascertain the truthfulness of information provided. In addition, the findings of this study are obtained from a semi-urban setting, as such these finding could not be generalizable to mothers in urban settings who could have different socio-demographic and economic characteristics.

Conclusion

A significantly good adherence to optimal IYCF practices was revealed in this study. Promotion and sustaining well-established policies to support IYCF programmes is recommended to maintain optimal IYCF practices. In addition, practical demonstrations need to be incorporated in the ANC visits.

Ethical approval and consent

The study proposal was approved by the Institute of Public Health and Health Management of Clarke International University. Permission to collect data from health facilities was granted by the District Health Officer (DHO) and the administrator in-charge of the health facilities. It was strictly voluntary to participate in the study and written informed consent was obtained from participants at all times.

Data availability

The data underlying this study is available from figshare. Dataset 1: A study on Factors influencing mothers' adherence to optimal and young child feeding practices for babies below two years in Mpigi town council, Mpigi district, Uganda. <https://doi.org/10.6084/m9.figshare.6470705.v1>¹⁷

This dataset is available under a CC by 4.0 license

Data points containing '999' or '99' denote missing variables. Additionally where respondents have answered yes or no, their answer in some cases prevents them from answering the next question and their for the subsequent analysis. '999/99' was used in case also.

Supplementary material

The questionnaire used in the study is available from figshare Supplementary File 1: Mothers' adherence to optimal infant and young child feeding practices in Uganda: a cross-sectional study <https://doi.org/10.6084/m9.figshare.6468653.v1>¹³

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Author endorsement

Masoomah Imanipour confirms that the author has an appropriate level of expertise to conduct this research, and confirms that the submission is of an acceptable scientific standard. Masoomah Imanipour declares they have no competing interests. Affiliation: Faculty of Nursing and Midwifery, Tehran University of Medical Sciences (TUMS), Tehran, Iran.

Competing interests

The authors declare that they have no competing interests.

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This study was conducted to determine factors contributing towards mothers' adherence to optimal infant and young child feeding practices for children under 2 years. The study investigators adopted cross sectional design and purposive sampling methods. The data was collected at randomly-selected health centres. The authors reported baseline SES characteristics of study participants and mothers' characteristics. They also reported mothers' practices on few IYCF indicators. They presented simple descriptive analysis.

The authors did not provide analysis and discussion regarding the main objective of the study: factors influencing mothers' adherence to optimal IYCF practices for babies below two years. This study has limited scope and interest of audience at a larger scale. Further, the data collection tools used are not appropriate especially the question asked to determine EBF rates. The language needs some revision. The analysis section needs more elaboration.

This paper wouldn't be accepted for indexing as there are major issues in the paper and the authors need to do further analysis and then draw conclusions.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

No

If applicable, is the statistical analysis and its interpretation appropriate?

No

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Public Health scientist with special interest in Nutrition

We confirm that we have read this submission and believe that we have an appropriate level of expertise to state that we do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Reviewer Report 20 March 2019

<https://doi.org/10.5256/f1000research.16482.r45357>

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Olukemi K. Amodu

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Mofeyisara Omobowale

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The study was designed to identify the factors that influence mother's adherence to optimal infant and young feeding (IYCF) practices in Uganda. The authors used four characteristics: initiation of breastfeeding within the first hour following birth; exclusive breastfeeding up to 6 months; continued breastfeeding with appropriate complementary foods up to 2 years and beyond to assess IYCF. The study however has some deficiencies.

1. The question, "Were you able to breastfeed up to 6 months?" did not take into consideration adherence to breastfeeding for 6 months. Adherence was a key factor in this study and this deficiency weakened the design and results.
2. The other question that would have also helped is "when did you introduce complementary feeding?". This would have helped clarify results.
3. The statistics were not extensive. The method section needs further explanation.

4. The discussion is weak and not well written. The results were not well discussed. There is need to properly link and discuss the findings from demographic information to other findings. Findings from other studies are not discussed.
5. There are grammatical errors in the article. Run-off statements and unclear sentences need editing. Engaging editors' service will be helpful to the manuscript.
6. Data from 264 respondents cannot be generalized for a country with over 44 million population. There is the need to review this in the discussion.
7. The meaning and importance of P-value in each of the tables presented needs explanation.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Genetics/Public Health

We confirm that we have read this submission and believe that we have an appropriate level of expertise to state that we do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Reviewer Report 24 September 2018

<https://doi.org/10.5256/f1000research.16482.r38277>

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Seema Puri

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The article brings out the IYCF practices in a town of Uganda. It reports the profile of the mothers, their access to healthcare as well the adherence to suitable IYCF practices.

While the authors have defined optimal IYCF as initiation of breastfeeding within the first hour following birth, exclusive breastfeeding up to 6 months followed by continued breastfeeding for up to 2 years and beyond with appropriate complementary foods after completion of 6 months, their scale to assess IYCF based on 4 questions does not cover these issues. For example, exclusive breastfeeding up to 6 months is not asked; instead the question is "Were you able to breastfeed up to 6 months?" - the concept of exclusive breastfeeding is lost. Since this is the basis of defining adherence, the whole data categorization becomes faulty, and hence subsequent analysis to study correlates of IYCF also are biased.

- What do the P values displayed in Table 3 onwards imply? This was not given in the discussion.
- Also in Table 4, many of the questions are multiple responses and therefore cannot add up to 100% nor can any statistical test be applied to them.
- No details of multivariate analysis given.
- Language errors need to be corrected.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Infant and young child nutrition , clinical nutrition

I confirm that I have read this submission and believe that I have an appropriate level of

expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

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