

Demographic Determinants of Access to and Usage of Breastfeeding Information among Parents in Mbeya City, Tanzania

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Abstract

The main purpose of this study was to examine the influence of demographic characteristics on access to and use of breastfeeding information among parents in Mbeya City, Tanzania. The study mainly deployed a quantitative approach to collect, process and analyze data in order to measure the influence of selected demographic characteristics on access to and use of breastfeeding information. The data collected were analyzed using SPSS to derive descriptive and inferential statistics. The findings suggest that the relationship between access and access and use of formal breastfeeding sources of information is weak (i.e. rho is far from 1) and insignificant (i.e. $p > .005$) while the relationship between access and use of informal sources of breastfeeding information is strong (i.e. rho is closer to 1) and significant (i.e. $p < 0.05$). These indicate that informal sources remain potential sources for breastfeeding for breastfeeding information among parents. Further, demographic characteristics (i.e. gender, age, marital status, level of education, and income) have been found to be important predictors to access and usage of breastfeeding information among parents in the study area. In planning for information setting to support accessibility and usability of breastfeeding information, demographic factors have to be taken into considerations.

Key words: Demographic predictors, access, use, breastfeeding information, Tanzania

1. Introduction

Breastfeeding is recognized worldwide because it plays a major role in ensuring the health of children and mothers. Due to the initiatives established in 1990 and reviewed at global and regional levels in 2006, breastfeeding has insignificantly risen. Statistics obtained in 2010 revealed that breastfeeding rates were still low among parents and that it was not practiced as a norm in many countries although there are big variations between regions and countries (United Nations Children's Fund [UNICEF], 2016). In developing countries the rates of breastfeeding moved from 33% in 1995 to 39% in 2010. For example, in West Africa the

rates moved from 12% in 1995 to 28% in 2010. Southern and Eastern Africa witnessed a jump from 35% in 1995 to 47% in 2010 while in Asia the rates changed from 40% in 1995 to 45% in 2010. Generally, these statistics show how small an effect available initiatives and strategies such as the Child Nutrition Program in America, Asia and Africa have had on breastfeeding practices across the globe (Cai et al., 2012). This unsatisfactory improvement in breastfeeding rates in developing countries especially Tanzania, can be attributed to insufficiency of information services provided to parents which leaves them partially informed on breastfeeding. This gives room for misconceptions such as beliefs that a newborn cannot live on breast milk only during the first six months of life hence the early introduction of extra food. Such beliefs contribute to poor children health and increases death risks (UNICEF, 2010; Mathew, 2000; Mwaisela & Mwantimwa, 2018). In addition to misleading beliefs, socio-cultural pressures contribute greatly to suboptimal breastfeeding practices (Diji et al., 2017; Wanjohi et al., 2017; Kearns, 2014).

Numerous studies have focused on prevalence, antenatal care, and predictors of exclusive breastfeeding among mothers are available (Mathew, 2000; Diji et al., 2017; Wanjohi et al., 2017) while those examining the influence of demographic characteristics on access and use of breastfeeding information are few (Hashim et al., 2017). As a result, little is known on this matter hence the need for this study whose main purpose was to examine influence of demographic characteristics on access and use of breastfeeding information. The study was guided by the following hypotheses:

H1: There is a strong relationship between access and use of breastfeeding information among parents;

H2: Married parents are more likely to access and use breastfeeding information than single parents;

H3: Parents with moderate income are more likely to access and use breastfeeding information than those with lower income;

H4: Parents with higher level of education are more likely to access and use breastfeeding information than those with lower level of education; and

H5: Parents less than 35 years old are more likely to access and use breastfeeding information than those under 35 years

In other words, gender, marital status, income and education levels are the selected demographic characteristics for this study because they are believed to affect access and use of information on breastfeeding.

2. Literature Review

Demographic characteristics such as level of education, gender, and income have been found to have an influence on access and use of information resources. These factors affect access and use of health information directly or indirectly (Katanga et al., 2015; Nkala & Msuya, 2011; Rutten et al., 2006). For instance, one's level of income directly affects access to information in that income determines one's ability to afford to buy information resources and indirectly by determining access to education, a prerequisite for effective information access and usage (Hashim et al., 2017). In other words, the factors work together in predicting the usage of health information sources and services. In fact, the effect of education on health is at least as big as that of income (Feinstein et al., 2006; Cotton & Gupta, 2004). Additionally, the level of education and social economic (income) status are important predictors of access to and usage of breastfeeding information such as frequency of breastfeeding (UNICEF & WHO, 2015). As observed, women with lower income and

education attend breastfeeding prenatal and general health classes less frequently hence minimising their chances of getting breastfeeding information and knowledge from health practitioners. The authors further inform that women with average age and older women are more likely to provide exclusive breastfeeding (Lange et al., 2017).

In the same vein, it is reported that psychological and physiological factors conditioned by environmental, social economic, and cultural factors determine usage of information (Idris et al., 2013). Surprisingly, Kasahun et al. (2017) found that women with education status of diploma and above did not utilize information and knowledge made available through prenatal classes and counseling services and as a result, they stop exclusive breastfeeding before their children reach six months of age. The authors attribute this to poor attendance to postnatal counseling classes and services. Apart from that, it is very interesting to note that women well knowledgeable on breastfeeding, through information received from either health professionals or other sources, have higher intent to exclusively breastfeed their children (Hmone, 2017). It is worth noting that low motivation for systematic breastfeeding among young and inexperienced mothers is associated with contradictory sources of breastfeeding information they have access to. On this, Arenz et al. (2004) noted that:

Young and inexperienced mothers are often manipulated and confused by different views and recommendations about breastfeeding duration and initiation, the selection of an infant formula when suggested by different German or European pediatricians and by industry which promotes bottle-feeding and by the early introduction of complementary foods.

This narration informs that breastfeeding information accessed from different sources by the young and inexperienced mothers brings confusion than clarity. This shows that information from health practitioners and industry does not tally hence ineffective breastfeeding practices. These reveal that the influence of demographic characteristics on breastfeeding practices are surrounded by others factors such as contradictory sources of information.

Besides that, it appears that demographic characteristics are good predictors of the usage of information resources such as TV, radio, computers, online videos, and other media. Predictors of access and usage of information sources and resources include; age, family status, gender, birth order, language spoken, and employment status (Mwantomwa, 2018; Anand, & Krosnick, 2005; Rideout, 2003). Other studies confirm that low income families have limited options for accessing and using breastfeeding information because they do not have funds to finance access to and usage of media such as TV and computers (Comstock & Scharrer, 1999). Regarding the influence of education, it was affirmed that the more educated parents are, the more likely to access print information resources such as books, newspapers, magazines, and fliers. The researchers argue that “with increasing age comes an increasing ability to process complex information from electronic media and to manipulate interactive media. The findings further indicate that age, experience, and marital status influence access and use of breastfeeding information (Alemayehu et al., 2009; Ogbo et al., 2017). Other studies have shown that low income among a majority of women prevents them from accessing health information (Hashim, 2017; Shirima et al., 2001; UNICEF, 2011). Due to low income, a majority of them cannot afford to purchase a radio, television, magazines, or textbooks. Similarly, it was noted that apart from age, gender and education, income predicts

breastfeeding related information seeking (Rutten, 2006). Apart from that, this studies revealed that the impact of demographic factors on access and usage of breastfeeding information vary from one region to another (Tardy & Hale, 1998; UNICEF, 2006; WHO, 2010).

Despite the popularity of internet information sources among women in the 21st century, their access and use of breastfeeding information leaves a lot to be desired. In addition to the general unsatisfactory usage, education is a key determinant to frequency of access of health information on the Internet (Weaver & Njeri, 2010). For example, women with higher level education have three times more likely to seek information on the internet than high school education (Koopman et al., 2015; Shirima et al., 2001; Pirisi, 2000; Khoo et al., 2008). In addition to finding, the usage of internet to access health information by parents stood at 43.9 %. A study by Hillyer et al. (2017) testifies that its usage as a communication channel is low and varies significantly by age, where those aged ≤ 45 years old are likely to utilize information for that purpose. On a different note, Scott et al. (2004) disclose that the value of breast milk practices varies among parents. The researchers argue that wealthy families believe that exclusively breastfeeding is meant for poor families who cannot afford baby formulae. Other scholars attribute such a mentality to the unlikeness of majority of women to access and use breastfeeding information from sources such as radio, books, and social media (Mbwana et al., 2013; Mwaisela & Mwantimwa, 2018; Mwantimwa, 2012).

3. Methodology

3.1 Research Approach

This study deployed a quantitative approach in analyzing statistical data to measure the influence of selected demographic characteristics on the access to and use of breastfeeding information. Accordingly, the study adopted across-sectional (snapshot) survey design in which respondents from whom data was gathered in essentially one attempt were chosen from a target population of parents and healthcare professionals. In general, data on respondents' characteristics, access and use of breastfeeding information were gathered. Quantitative data were preferred because they provide room for inferences to a population.

3.2 Study Setting, Sample Size and Sampling Procedure

This study was conducted in Mbeya City, one of the fastest growing cities in Tanzania and a business centre for the southern regions and neighboring countries of Malawi, Zambia, and Congo. The City was selected because it is located in the Southern Highlands where breastfeeding rates are low and children's health is problematic (Shirima et al., 2001; Hashim et al., 2017). Regarding selection, health centres' registers were used as sampling frame and only parents with children aged between 0 and 2 were listed down and their dates for attending health centres. The activity of sorting out the parents was done by the researchers and research assistants. In all, a list of 219 parents from the two health centres was created, of these, 94 were randomly selected. Out of 94 parents with children aged between 0 and 2 years, 70 (74.5%) were voluntarily agreed to participate in the present study. As results, the study's sample was made up of 70 parents with infants and children aged between 0 and 2 years selected randomly from two health centres of the City. In addition, the study involved 10 purposefully selected healthcare professionals from the same health centers. These were

purposely selected because they were working these child health care sections. In fact, they directly interacted with the parents and cared for the infants and children. For example, some were responsible for facilitating seminars and counseling services to the parents with infants and children.

3.3 Data Collection Methods, Instruments and Protocol

The study used both primary and secondary data sources which were collected through a combination of methods. Secondary data was collected through documentary reviews while primary data was collected using a standardised questionnaire and observation methods. Accordingly, the instruments used by the study to gather data were questionnaire, interview and a participant observation guide. A questionnaire is one of the commonly used data collection tools, which presents respondents with questions to answer in a pre-arranged order. Questionnaires with open and closed questions were administered by the researchers and assistants to seventy (70) respondents in face to face at the two health centers. The questionnaires were not self-administered because some of the parents cannot read or write hence the need for the researcher to provide assistance. In addition to its ability to capture and examine respondents' experiences, practices, and opinions and its ease of application, this method was used because the number of respondents involved was too big for other methods such as interviews. Primarily, ordinal and nominal measurements in form of multiple-choice questions were used in the questionnaires. Besides that, face to face interview was used to collect data from the key informants.

3.4 Data presentation and analysis

Data collected were organized, described, coded, analyzed, and generated. The study used a Statistical Package for Service Solution (SPSS) Software (version 20) to generate descriptive (i.e. frequencies and percentages) and inferential (i.e. Chi-Square test, regression and correlations) statistics. This was done to measure trends, differences, level of associations, direction of associations and their strengths. Analysis outputs are presented in tables.

3.5 Ethical considerations

To ensure that the study abided by ethical conduct, a research clearance letter was obtained from the University of Dar es Salaam which was then used to get permission from the Mbeya Regional, City Council authorities, District Medical Officer and in charge from the two health centres involved before data collection. Oral informed consent was gained from the parents to participate in the study. Along that, the researchers maintained the element of confidentiality with the parents' socio-economic characteristics. The confidentiality was important to instill confidence in respondents and in order avoid compromising the study findings. In fact, the researchers briefly explained the purpose of this study and that participation was voluntary respondents were free to participate or not.

4. Results

4.1 Selected demographic characteristics, access and use of BFI

The respondents were asked to provide background information such as gender, age, marital status, level of income, education and number of children. Accordingly respondents were asked how long they breastfed their children and schedule. To determine the trend descriptive statistics and independent chi-square test were performed. Questions requiring respondents to reveal their demographic characteristics yielded the data summarized in Table 1:

Table I: Selected Background information of parents participated in the study

Background information (n = 70)		Frequency	Percent	P-value
Health centre	Ruanda	39	55.7	.339
	Igawilo	31	44	
Gender	Female	65	92.9	.000
	Male	5	7.1	
Marital status	Married	46	65.7	.000
	Not married	24	34.3	
Age	18-24	15	21.4	.000
	25-36	40	57.1	
	37-46	15	21.4	
Level of education	Primary	28	40.0	.000
	Secondary	12	17.1	
	Tech. Certificate	14	20.1	
	Diploma	10	14.3	
Income per month	1-50,000	33	47.1	.045
	51,000-100,000	20	28.6	
	>100,001	17	24.3	
Number of child	1-3	60	85.7	.000
	4-6	10	14.3	
	Partial	39	55.7	
	Exclusive	25	35.7	
Breastfeeding schedule	Predominant	6	8.6	.000
	Used	10	14.3	
	Not used	60	85.7	

Source: Field Data, 2017

The results show that 65 (92.9%) of the respondents are female while 5 (7.1%) are male hence presenting a significant difference ($\chi^2 = 11.07$; $df = 3$; p value = 0.002) between male and female parents who participated in this study as confirmed by Pearson Chi-Square test. This suggests that a majority of parents attending clinics and counseling classes are female and that they are the ones more directly involved in taking care of children. Apart from that, the findings show that majority (57.1%) of the respondents were aged between 25 and 36 years; meaning that they were within the recommended child bearing age range. The statistics imply that in the surveyed wards of Mbeya City, parents in these ages attend clinics more than those of other ages. On marital status, the findings indicate that a significant percentage (65.7%) of respondents are married, which can be attributed to the fact that marriages are engaged in early and is the main source of children. In terms of income, the results revealed that a noticeable percentage (47.1) of respondents had low monthly incomes that were between 1 and 25 USD because most of the respondents are housewives who depend on their

partners. Concerning education levels, the findings revealed that only 8% of the respondents had university education, which means that a majority of parents have low level of education (i.e. primary (40%), secondary (17.1%), and college certificate (20.1%). On the whole, statistical significant different was found on gender, marital status, age, level of education, income, number of child, length of breastfed and breastfeeding schedule of the parents participated in survey since p-value is <05 while the study area did not show the statistical different since p-value is > .05.

4.2 Kinds of information accessed and used

The respondents were asked to indicate the types of breastfeeding information accessed and used. Table 2 presents the results on the types of breastfeeding information accessed and used by the parents participated in the study:

Table 2: Types of breastfeeding information accessed and used

Types of information (n = 70)	Have access to		Use it	
	Count	Percent	Count	Percent
Baby cues	44	62.9	31	44.3
Bottle feeding	26	37.1	18	25.7
Breastfeeding routine	63	90	29	41.4
Expressing and breast storing milk	27	38.6	11	15.7
Frequency of infant feeding	59	84.3	47	67.1
Breastfeeding implications	38	54.3	23	32.9
Caring baby when away from home	48	68.6	14	20
Breast care	42	60	37	52.9
Introducing complementary food	53	75.7	31	44.3
Starting solid food	48	68.6	28	40
Nutritional food	57	81.4	32	45.7

Source: Field Data, 2017

The results indicate that most of the parents who participated in this study know about different sources of breastfeeding information. For example, a significant proportion of parents understudy have access to information on breastfeeding routines (90%) and frequency of infant feeding (84.3%), nutritional food (81.4%), introducing complementary food (75.7%), starting solid food and caring baby when away from home (68.6%), baby cues (62.9%), breast care (60%) and information on breastfeeding implications (54.3%). Accordingly, moderate percent (37.1%) of the parents said they had access to bottle feeding information. On the whole, a majority of parents who participated in this study said they have access to informal and formal information sources. Despite the significant portion of the parents had access to breastfeeding information, moderate proportion of them were using information to boost breastfeeding for infant health. More usage of breastfeeding information was seen on frequency of infant feeding (67.1%) and breast care (52.9%). The results on the usage inform that most types of breastfeeding information accessed were moderately utilized by the parents understudy. The ability to access breastfeeding information does not tally with the usage of breastfeeding information among the selected parents in Mbeya City. The study noted that 50 (71.4%) of the respondents said they had access to breastfeeding information while 20 (28.6%) had no access to breastfeeding information. Regarding the types of sources accessed, the results suggest that 34 (68%) had accessed informal sources whereas 16 (32%) had accessed formal sources of breastfeeding information. These results are an indication that

noticeable percent of selected parents were mainly using informal sources of breastfeeding information. Furthermore, only 30 (43%) admitted that they use the breastfeeding information for improving breastfeeding practice.

4.3 Relationship between access to and usage of breastfeeding information sources and channels

To test how significant the difference between access to and usage of the information was, a Chi-Square test was performed for the purpose of accepting or rejecting the following hypothesis:

H1: there is a strong relationship between access to breastfeeding information and its usage among parents. To measure the strength and significance of the relationship between these variables, a Spearman's rho was performed. Table 3 summarises the results of the test:

Table 3: Relationship between access and usage of BFI sources and channels

Spearman's rho (n = 70)			Access to breastfeeding information sources	Usage of formal sources of breastfeeding information	Usage of informal sources of breastfeeding information
Access to breastfeeding information Sources	Correlation Coefficient Sig. (2 tailed)	1.000	.234	.711	
Usage of formal sources of breastfeeding information Sources	Correlation Coefficient Sig. (2 tailed)	.234	1.000		
Usage of informal sources of breastfeeding information	Correlation Coefficient Sig. (2 tailed)	.711		1.000	

**correlation is significant at the 0.01 level (2-tailed)

Source: Field Data, 2017

The Spearman's rho (Correlation Coefficient = .234; p value = .059) test reveals that the relationship between access to and usage of formal breastfeeding information sources and channels is weak (i.e rho is far from 1) and insignificant (i.e. > .005) while the relationship between access to and use of informal sources of breastfeeding information is strong (i.e. rho is closer to 1) and significant (i.e. $p < 0.05$). In other words, the findings do not confirm on the relationship of access to and usage of formal sources of breastfeeding information, and confirm on access to and usage of informal sources of breastfeeding information.

4.4 Influence of demographic characteristics on access to and usage of BFI

The demographic data (age, sex, income, and level of education) obtained about respondents was used to find out how individual demographic characteristics influence access to and use of breastfeeding information. Table 4 shows the results obtained:

Table 4: Influence of demographic characteristics on access to and use of breastfeeding information

Logistic regression (Access)

Number of obs = 70
 LR chi² (13) = 17.59
 Prob> chi² = 0.0035
 Pseudo R² = 0.2100
 -33.083291

Log likelihood

Access to BFI	Odds Ratio	Std. Err.	Z	P>z	[95% Conf.Interval]	
Gender (Female = 1)	3.59	4.15	1.11	0.27	.37	34.57
Age (< 35= 1)	1.11	.52	0.21	0.83	.44	2.78
Marital status (Married = 1)	2.41	1.56	1.36	0.17	.68	8.57
Income (>100001=1)	.24	.15	3.16	0.00	1.64	8.31
Education level(>Primary=1)	3.69	.099	-1.29	0.19	.00	5.32
Cons	.039	.099	-1.29	0.19	.00	5.33

Logistic regression (Usage)

Number of obs = 70
 LR chi² (13) = 17.56
 Prob> chi² = 0.0023
 Pseudo R² = 0.2139
 -34.292682

Log likelihood

Use of BFI	Odds Ratio	Std. Err.	Z	P>z	[95% Conf.Interval]	
Gender (Female = 1)	3.14	3.65	0.99	0.32	.32	30.64
Age (< 35= 1)	1.08	.49	0.16	0.87	.44	2.63
Marital status (Married = 1)	2.18	1.34	1.28	0.20	.66	7.24
Income (< 1000001=1)	.25	.15	-2.28	0.02	.077	.82
Education level(>Primary=1)	3.85	1.58	3.29	0.00	1.72	8.58
Cons	.046	.12	-1.23	0.21	.00	6.20

Source: Field Data, 2017

The overall findings suggest that the selected demographic characteristics are potential predictors of access to and use of breastfeeding information among parents. Regarding **H2**: married parents are more likely to access and use of breastfeeding information than single parents, the results confirm it by indicating that married parents are two (2) times more likely to access (OD = 2.41) and use (OD = 2.18) breastfeeding information than those who are single. This means married parents are more likely to access and use breastfeeding information than single parents. The results have rejected **H3** that suggested that parents with moderate income are more likely to access and use breastfeeding information than those with lower income. With regards to this, the results revealed that parents' income has odds ratio of less than 1 (i.e. OD = 0.25) for access and use of breastfeeding information, which implies that a negative influence exists between the variables. Regarding **H4** that suggests that parents with higher level of education are more likely to access and use breastfeeding

information compared to those with lower level of education, the results indicated a positive connection between the variables. The results reveal that parents with education above primary school level have greater odds ratio of accessing (OD = 3.69) and using (OD = 3.84) breastfeeding information than those with education below primary level. This implies that parents with lower level of education are less likely to access and use different breastfeeding information resources and services hence confirming hypothesis. Lastly, regarding age and breastfeeding information usage, **H5** suggested that parents less than 35 years old are more likely to access and use breastfeeding information than those above 35. These results indicate that parents less than 35 years old have greater odds of accessing (OD = 1.10) and using (OD = 1.08) breastfeeding information than those above 35 years of age hence accepting the hypothesis. All in all, the findings reveal positive influence of greater than 1 odd ratio between demographic characteristics (i.e. gender, age, marital status, and level of education) and access and use of breastfeeding information.

5. Discussion

The findings of this study reveal that majority (71.4%) of the parents who participated admitted they have access to breastfeeding information while below 50% of confirmed that they actually use information. The result simply that a half of the parents are not using information even though have access to information. This is an indication that a significant proportion of selected parents have access to different types of breastfeeding information from informal than formal sources. The findings further suggest that a weak (i.e. rho is far from 1) and insignificant (i.e. $> .005$) relationship exists between access to breastfeeding information and usage. It is unfortunate that despite the importance of breastfeeding information, these kinds of information were not prioritized and used by a majority of parents. The low prioritisation is associated with low knowledge on credible sources and its value of breastfeeding information for infant health. In the same note, low level of education and income are among major factors constraining usage of breastfeeding information among the parents. For example, insufficient search skills for searching and for determining credibility of information sources contribute to the low usage of BFI. Besides that, the findings inform that lack of local content and language barriers. Expectedly, in most cases the language used to convey breastfeeding information is English which is not used by a majority parents who have lower level of education. As noticeable portion of parents who participated in this study had the primary level of education. However, the low usage of breastfeeding information sources only concerns formal sources and not informal ones (e.g. relatives, friends and partners) that do not demand such knowhow. Indeed, the selected parents depend much on informal rather than formal sources of information. It is worth noting that majority of the parents depend on friends, partners, neighbors and relatives for accessing breastfeeding information. For those who depend on formal sources, they mainly relied on healthcare practitioners.

Consequently, most of the parents in the study area use breastfeeding information provided by their mothers, relatives and traditional attendants rather than health practitioners. This can be attributed to beliefs, norms, and other cultural influences which together affect optimal breastfeeding practices hence risking children's health. Previous studies revealed that most of Tanzanian health centres have no routine seminars and workshops on child health hence parents rely on friends, neighbors, and relatives as their sources of health information (Mbwana et al., 2013). In additions to that, majority of parents do not use available breastfeeding information due to cultural factors (see also Comstock & Scharrer, 1999).

Besides that, it appears that mothers of infants mainly seek and utilize diverse sources of health information but trust traditional sources of health information for their children (Khoo et al., 2008). These reflect the reality of the studied parents. These findings are not similar with the findings from previous studies which found that formal information sources are more accessed by information seekers than informal sources in United States (Cotton & Gupta, 2004). While information seekers in USA rely on formal such as health practitioners as the main sources for health information, parents participated in this study mainly depend on informal sources such as neighbors, friends and traditional healers. These reveal that there are discrepancies in terms of the kinds of the health information sources such as breastfeeding among parents as determined by the socio-economic factors such as education, economic status, age, gender, marital status and occupation and geographical location. These factors either deter or boost the accessibility and usability of breastfeeding information among parents who seek such kind of information for their children (Tardy & Hale, 1998; Pirisi, 2000). In all, the demographic characteristics determine the accessibility and usability of breastfeeding information among the parents regardless of geographical location.

The findings further show that level of education is a good predictor of access to and use of breastfeeding information among parents. This discloses that one's level of education determines their likeliness to access and use breastfeeding information where the higher the education level parents have the more likely access and use the information. The explanation for this relationship is that education increases people's awareness about information sources, and equips them with skills and techniques for accessing and using the information. These findings are supported by UNICEF (2006) who found that women with higher level education were three times more likely to seek information on the internet than those with education below high school. Another study (i.e. Lange, 2017) confirms that women with lower level of education are less motivated to seek breastfeeding information from health practitioners through prenatal classes. It appears that long duration of breastfeeding is associated with medium and higher level of education. This is due to the fact that education is considered as a tool to facilitate the accessibility and usability of information and knowledge on breastfeeding among women and their partners. The findings from the study that examined the prevalence and determinants of cessation of exclusive breastfeeding in the early prenatal period in Australia confirms that mothers with high level of education have a better position to take up health care information than those with lower level of education (Ogbo et al., 2017). In fact, mothers with higher education level have possibility to access and using different sources of information. Regarding parents with lower level of education, the possibility of having access to diverse information and knowledge is constrained by language barriers and limited social networks. In addition, low utilization of breastfeeding information is associated with lower reading levels and limited access to potential sources of breastfeeding information (Cotton & Gupta, 2004).

Besides the influence of education level to accessing and using breastfeeding information, the study results indicate that level of income's influence on access to and usage of breastfeeding information is statistically significant (i.e. p value of 0.02 is less than 0.05) too. Similarly, studies by Rideout et al.(2003) revealed that breastfeeding practices can be influenced by economic status. These findings tally with the findings by Lange et al. (2017) who noted that parents with lower and average incomes were less frequently accessing information through

visiting prenatal classes than those with higher income level. This can be attributed to the fact that due to low incomes some parents cannot afford a radio, television, mobile phone airtime, subscriptions costs, and other facilities needed for accessing breastfeeding information (Mwantimwa, 2012). These also inform that low income limit the frequency of travelling to different health facilities for accessing and using breastfeeding information and services. In the same note, low purchasing power of information services and facilities hence, are less motivated effectively breastfeeding information by women who participated in this study. As a result women become less motivated to provide effective breastfeeding and tend to introduce complementary food for their infants before six months. There is no surprise that low motivation is attributed with low level of breastfeeding information and knowledge. It is also worth to note that mothers with low socio-economic status have limited information appropriate for breastfeeding of their infants than those with high socio-economic status. In all, inequalities associated with income results in a lower likelihood of seeking and using breastfeeding information among the parents.

Apart from that, the findings suggest that age has an influence on information accessing and using of breastfeeding information among parents in the surveyed area. Evidently, parentages < 35 years of age are more likely to access and use breastfeeding information than those with >35 years of age. This can be attributed to the fact that people of aged between 20 and 35 are in the normal child bearing age hence their high breastfeeding information needs. As a result of the information needs, young adults are more likely to utilize different sources of information including Social Networking Sites. Likewise, a study by WHO (2010) revealed low usage of electronic communication channels to access and share information (including health information) and that the usage varied significantly by age with those aged ≤ 45 years of age more likely to utilize the channels. Despite the young and inexperienced mothers are more likely to access, information on breastfeeding duration, initiation and selection of infant formula created by different industry and health practitioners brings more confusion than understanding. Whereas industries promote bottle-feeding and early introduction of complementary foods, health practitioners promote exclusive breastfeeding for infant health. It appears that information and knowledge created by health profession and business firms is contradictory (Lange et al., 2017). These clearly suggest that information created by health practitioners does not tally with the information accompanied with nutritional foods from the industries and food processing firms. For example, industries tend to promote artificial nutritional foods information for business profit gain while health practitioners are promoting natural nutritional food information through breastfeeding for infant health. These contradictions limit usability of information and knowledge. Perhaps this could be one of the reasons why mothers in the surveyed area to mainly rely on the information from relatives, neighbors, friends, partners and other informal sources.

Regarding gender, women been found to be more likely to access and use breastfeeding information than men. This finding concurs with an observation made by the researcher during data collection where it was noted that the number of men attending antenatal clinics and postnatal classes was insignificant. In fact, women are the ones mostly involved in caring for their children and breastfeeding. A study by Cotton and Gupta (2004) affirms that men are less likely to attend counseling services and seek health information than women. This discloses that female and male parents have differences in their health information seeking patterns. The researcher stress that women are more concerned than women when it comes to health information seeking. Furthermore, reveal that women are more likely to frequently access and use health information on Internet. Diversely, Rutten et al. (2006) found that information seekers are likely to be male. On the other hand, the findings revealed that

married women were more likely to access and use breastfeeding information than single parents. These might be attributed to the fact that the possibility for married women to get support from their husbands is high compared to single women. Also, the married parents have greater chance of share health information in their families than single parents. Surprisingly, the findings from the present study do not corroborate with the findings by Hashim et al. (2017) in the sense that partners' knowledge and level of education are not associated with knowledge on infant feeding. These inform that partners' knowledge on health issues such as breastfeeding has less contribution towards breastfeeding practices and improvement. These further entail that the possibility of sharing breastfeeding information among the partners is low hence ineffective breastfeeding.

6. Conclusion and recommendations

Informal sources were found to be more effective than formal sources for accessing different types of breastfeeding information. The breastfeeding information accessed is insignificantly used to enhance breastfeeding practices among the parents. Apart from that, the extent of access and use of breastfeeding information by parents and is influenced by demographic characteristics (e.g. education, gender, income, marital status and age) such that parents with higher education and income levels are likely to have access and to use breastfeeding information services and resources. Further, one's gender, age, and marital status are predictors of accessing and using breastfeeding information among parents. To increase the accessibility and usage of breastfeeding information, information and health practitioners have to consider demographic characteristics when it comes to designing health information settings. The study recommends that health practitioners should enhance the production of breastfeeding information and knowledge. Besides that, local governments and health practitioners should enhance access to breastfeeding information and knowledge through user friendly information outlets such as mobile phones. Breastfeeding education to all communities regardless of geographical location, gender, economic and marital status through mass and social media should be provided.

References

- Alemayehu, T., Haidar, J, and Habte, D. (2009). Determinants of exclusive breastfeeding practices in Ethiopia." *Ethiop.J.Health Dev* 23 (1): 12-18
- Anand, S, and Krosnick, J. Demographic predictors of media use among infants, toddler and pre-schoolers. *Stanford University, 455 Series* 2005.
- Arenz, S., Ruckerl, R., Koletzko, B., & von Kries, R. (2004). Breast-feeding and childhood obesity-a systematic review. *International Journal of Obesity* 28: 1247-1256.
- Cai, X., Wardlaw, T, and Brown, D.W. (2012). Global trends in exclusive breastfeeding. *International Breastfeeding Journal* 7 (12): 1-5.
- Comstock, G, and Scharrer, E. (1999). *Television: What's on, who's watching, and what it means*. London: Academic Press.
- Cotton, S.R., & Gupta, S.S. (2004). Characteristics of online and offline health information seekers and factors that discriminate between them. *Social Science and Medicine* 59: 1795-1806.

- Diji, K.A. A., Bam, V., Asante, E., Lomotey, A.Y., Yeboah, S., and Owusu, H.A. (2017). Challenges and Predictors of Exclusive Breastfeeding Among Mothers Attending the Child Welfare Clinic at a Regional Hospital in Ghana: A Descriptive Cross Sectional Study. *International Breastfeeding Journal* 12 (13).
- Feinstein, L., Sebates, R., Tashweka, M., Sorhaindo & Hammond, C. (2006). What are the effects of education on health measuring the effect of education health and civic engagement. *Proceedings of the Perhagen Symposium OECD*.
- Hashim, T. H., Mgongo, M., Katanga, J., Uriyo, J.G., Damian, D.J., Stray-Pedersen, B., Wandela, M., and Msuya, S. E. (2017). Predictors of appropriate breastfeeding knowledge among pregnant women in Moshi Urban, Tanzania: a cross-sectional study. *International Breastfeeding Journal* 12 (11).
- Hillyer, G.C., Karen, M., Schmitt, Lizardo, M., Reyes, A., Bazan, M., Alvarez, M.C., Sandoval, R., Abdul, K, A, and Orjuela, M.A. (2017). Electronic communication channel use and health information sources among Latinos in Northern Manhattan. *Journal Community Health* 42 (2): 349-357.
- Hmone, M.P., & Li, M., Agho, K., Alam, A., and Dibley, M. J. (2017). Factors associated with intention to exclusive breastfeed in central women's hospital, Yangon, Myanmar. *International Breastfeeding Journal* 12 (29).
- Idris, M.S., Tafeng, G.A, and Elgorash, A. (2013). Factors influencing exclusive breastfeeding among mothers with infant age 0-6 months. Accessed July 10, 2017 <http://www.ijsr.net/archive/v4i8/SUB157153.pdf>
- Kasahun, A.W., Wako, W.G., Gebere, M.W, and Neima, G. H. (2017). Predictors of exclusive breastfeeding duration among 6–12 month aged children in Gurage Zone, South Ethiopia: A Survival Analysis. *International Breastfeeding Journal* 12 (20).
- Katanga, J., Mgongo, M., Hashim, T., Stray-Pedersen, B, and Msuya, S.E. (2015). Screening for syphilis, HIV, and Hemoglobin during pregnancy in moshi municipality, tanzania: how is the health system performing. *Science* 3 (1): 93–6.
- Kearns, A., Hurst, T., Caglia, J, and Langer, A. (2014). *Focused Antenatal Care in Tanzania: Delivering Individualised, Targeted, High-quality Care*. Boston: Maternal Health Task Force.
- Khoo, K., Bolt, F.E., Jury, S., & Goldman, R.D. (2008). Health information seeking of parents in the internet age. *Journal of Paediatrics and Child Health* 44 (7-8): 419-423.
- Koopman, R. J., Linsey, M., Steege, B., Moore, J.L., Clarke, M. A., Canfield, S.M., Kim, M.S., and Belden, J.L. (2015). Physician information needs and electronic health records time to reengineer the clinic note. Accessed July 24, 2017 at: <http://www.jabfm.org/content/28/3/316.short>
- Lange, A., Nautsch, A., Weitmann, K., Ittermann, T, and Heckmann, M. (2017). Breastfeeding motivation in pomerania: survey of neonates in Pomerania (SNiPStudy). *International Breastfeeding Journal*, 12 (3).
- Mathew, S. (2000). The prevalence of breastfeeding in South Leicestershire. *Breastfeeding Journal of Community News*.
- Mbwana, H., Conlon, C, and Von Hurst, P. (2013). Exclusive breastfeeding: mothers' awareness.
- Mwaisela, N. and Mwantimwa, K. (2018). Breastfeeding information seeking behavior among parents in Mbeya City, Tanzania. *Tanzania Journal of Health Research* 20(3)
- Mwantimwa, K. (2012). The use of pull information mode to support poverty reduction programmes in rural Tanzania: A case of Monduli and Bagamoyo districts." Universiteit Antwerpen (Belgium), *ProQuest Dissertations Publishing*, 3571502

- Mwantimwa, K. (2018). Demographic predictors of listening to radio and watching TV programmes among agro-pastoralists in Tanzania. *Athens Journal of Mass Media and Communications* 4(3) 205-217.
- Nkala, T.E., and Msuya, S.E. (2011). Prevalence and predictors of exclusive breastfeeding among women in Kigoma Region, Western Tanzania: a community based cross-sectional study. *International Breastfeed Journal* 6 (1).
- Ogbo, F.A., Eastwood, J., Page, A., Arora, A., McKenzie, A., Jalaludin, B., Tennant, E., Miller, E., Kohlhoff, J., Noble, J., Chaves, K., Jones, J.M., Smoleniec, J., Chay, P., Smith, B., Oei2, Ju-Lee., Short, K., Collie, L., Kemp, L., Raman, S., Woolfenden, S., Clark, T., Blight, V., Eapen, V., & EarlyYears Research Group. (2017). Prevalence and determinants of cessation of exclusive breastfeeding in the early postnatal period in Sydney, Australia. *International Breastfeeding Journal* 12 (16).
- Pirisi, A. (2000). Low health literacy prevents equal access to care. *The Lancet* 356, 1828.
- Rideout, V. J., Vandewater, E. A., Wartella, and Ellen, A. (2003). Zero to six: electronic media in the lives of infants, toddlers and preschoolers. Accessed August 28, 2017. <https://eric.ed.gov/?id=ed482302>
- Rutten, L.J.F., Suijers, L, and Hesse, B. (2006). Cancer-related information seeking: hints from the 2003 Health Information National Trends Survey (HINTS). *Journal of Health Communication* 11: 147-156.
- Scott, J. A., Shaker, M, and Reid, B. (2004). Parental attitude towards breastfeeding: their association with feeding outcome at hospital discharge. *Birth* 3(1): 125-131.
- Shirima, R., Greiner, T., Kylberg, E, and Gebre-Medhin, M. (2001). Exclusive breastfeeding is rarely practised in rural and urban Morogoro, Tanzania. *Public Health Nutr.*4 (02): 147-54.
- Shirima, R., Medhin, G, and Greiner, T. (2001). Information and Socio Economic Factors Associated with Early Breastfeeding Practices in Rural and Urban Morogoro, Tanzania.” *ActaPediatr* 90 (8): 936-942.
- Tardy, R.W., & Hale, C. (1998). Getting “plugged in”: a network analysis of health-information seeking among ‘stay-at-home moms’. *Communication Monographs*, 65 (4): 336-357.
- UNICEF (2006). The state of the world’s children fund: excluded and invisible for every child health, education, equality, and protection. Accessed June 2, 2017. <https://www.unicef.org/sowc/archive/ENGLISH/The%20State%20of%20the%20World%27s%20Children%202006.pdf>
- UNICEF (2011). Levels and trends in child mortality. Accessed 2 September, 2017. http://www.childmortality.org/files_v20/download/Levels%20and%20Trends%20in%20Child%20Mortality%20Report%202011.pdf.
- UNICEF and WHO. (2015). Improving infant and young child feeding in ethiopia through community based grain banks using local foods. Accessed July 24, 2017 at http://www.fasebj.org/content/29/1_Supplement/120.7.short
- United Nations Children’s Fund [UNICEF]. (2016). The state of the world’s children fund: 70 years for every child. Accessed August 11, 2017. https://www.unicef.org/publications/files/UNICEF_SOWC_2016.pdf.
- United Nations Children’s Fund [UNICEF]. (2010). The UN inter-agency group for child mortality estimation. Accessed August 2, 2017 at. http://www.childmortality.org/files_v20/download/
- Wanjohi, M., Griffiths, P., Wekesah,F., Muriuki,P., Muhia, N., Musoke, R.N.,Fouts, H.N., Madise, N.J, and Kimani-Murage, E.W. Sociocultural Factors Influencing

Breastfeeding Practices in Two Slums in Nairobi, Kenya. *International Breastfeeding Journal* 12 (5).

Weaver, B, and Njeri, V. (2010). Health information seeking behaviours, health indicators, and health risks. *Journal of Public Health* 100:1520–1525.

WHO (2010). Child growth standards and the identification of the severe acute malnutrition in infants and children. Accessed July 2, 2017 at: <http://www.who.int/childgrowth/en/>