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## **Social Media Influence on Exclusive Breastfeeding Among Expecting Mothers in Port Harcourt**

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### **Abstract**

While social media have the potential to help expecting and lactating mothers learn the profits of, and steps to actualise exclusive breastfeeding, studies in health communication in Nigeria have failed to adequately interrogate the role of digital media in the actualisation of exclusive breastfeeding. This study bridges that gap by exploring the use of social media for the actualisation of exclusive breastfeeding in Rivers State. This study reports on the response from a quantitative survey of breastfeeding mothers (N=200) in three General Hospitals in Port Harcourt, Rivers State, Nigeria. Findings suggest that breastfeeding mothers in Port Harcourt that reported receiving information about and learning about exclusive breastfeeding through social media platforms are more likely to report actualising exclusive breastfeeding, controlling for all other factors in the model. Based on the findings, we conclude that social media are the most efficient means of communicating exclusive breastfeeding information and messages following the availability and portability of internet-enabled mobile phones. We therefore recommend that social media be adopted as the flagship media for communicating exclusive breastfeeding in Port Harcourt metropolis.

**Keywords:** Social Media, Exclusive Breastfeeding, Rivers State, Health Communication, Media, Breastfeeding Mothers

### **Introduction**

Digital technologies, such as social media, mobile social networking applications, and geo-technologies, have significantly revolutionised information dissemination and communication (Wadham, Green, Debattista, Somerset, & Sav, 2019). Social media refer to „any user-controlled and shareable and interactive forms of communication’ (Guse *et al.*, 2012, p. 536). In Nigeria, as is the case in many other countries, social media continue to expand and change as new applications are appearing every day. While Facebook users have steadily increased over the past few years, the current

numbers show that Facebook and other traditional social networking sites are losing active users to other platforms such as mobile social networking applications and microblogs (Author, 2015, 2017; Uwalaka, Rickard, & Watkins, 2018).

As social media increasingly become popular, it becomes imperatives that they are used for health communication. Social media have the potential to help expecting and lactating mothers learn the profits of, and steps to actualise exclusive breastfeeding. People repeatedly seek information about helpful medicinal products to help them achieve better health and wellbeing (Catalán-Matamoros & Peñafiel-Saiz, 2019). The media (both mainstream and digital) are one of the foremost foundations for information relating to medical innovations, and health education to the public. The impacts of the media to their audiences are well documented, and the volume and category of information presented in the media can, „shape beliefs, attitudes, and perceived norms, which, in turns, influences behaviours (Catalán-Matamoros & Peñafiel-Saiz, 2019, p. 415).

Thus, the sustainability of any development programme is dependent on how effective the development programme is communicated. This submission is based on our understanding that communication is the right “oracle” to achieving development. Recently, researchers have argued that communication and development are so closely related that there cannot be development without communication (Okon, 2001, 2014). This argument gave rise to the popularisation of the concept of development communication (DEVCOM) or communication for development initiative of media scholars and academics.

In a developing country like Nigeria, strategies, plans and polices on development projects can only be effective and the desired results achieved if the programme is properly communicated (Nzete, 2010). This is what scholars refer to when they discuss development communication. For example, Nwabueze (2008) sees development communication as conscious efforts by a sender of packaged message aimed at persuading, encouraging and convincing the receiver to adopt and participate in actualising the development plan. It is used to bring about behavioural change towards the desired development in the society.

Social media like traditional media are the channel that brings about these campaigns, advocacy advertising and behavioural change. Advocacy advertising „champions preventive action against condition affecting the public welfare' (Ukonu, 2004, p. 83). This advocacy is the production of basic information and knowledge to influence division within the environment where the development programme like exclusive breastfeeding is required.

Exclusive breastfeeding is a practice where infants receive only breast milk without missing it with water, other liquids, tea, herbal preparation or food in the first six months of life, with the exception of vitamins, mineral supplements or medicines (Motee & Jeewon, 2014, p. 54). Breastfeeding is a unique source of nutrition. It plays an impotent role in the growth, development and survivals of infants (Sharmin, Chowdhury, Khatun, & Ahmed, 2016) This is why breast milk is biologically

appropriate food for babies. When babies are not breastfed, they are at risk of a number of illness and developmental difficulties in both the short and long term (Pitman & Berrtt, 2007).

Exclusive breastfeeding practice is met with increasing attention by health practitioners and significant others in recent year due to the beneficial effect of the practice on the development of babies and their mothers (Okafor, Agwu, Okoye, Uche, & Oyeoku, 2018). Okafor *et al.* (2018) highlight some of these illnesses such as gastrointestinal infections, respiratory tract infection, early childhood obesity, diarrhoea, and pneumonia. Exclusive breastfeeding save lives among most vulnerable infants under six months by avoiding illness causing pathogens in artificial milk, boosting their immune system and proving all required nutrients and sufficient fluid to prevent dehydration (Okafor *et al.*, 2018).

The important role of early nutrition in later life of human health and development is evident in scientific research into health and development. In 2001, World Health Assembly endorsed the recommendation for six months of exclusive breastfeeding and continued breastfeeding for two years and beyond. Despite the benefits of exclusive breastfeeding, the proactive adoption of this behaviour by lactating mothers has remained minimal in developing counties (Kuma, 2015). This is why researchers contend that the baby-friendly initiative seems not to have done much in Nigeria (Okafor *et al.*, 2018). This is evident in the 2018 breastfeeding report published by Nigeria Ministry of Health. The report shows that only 17% of exclusive breastfeeding practice was adopted which is the lowest in the Continent (Federal Ministry of Health, 2015).

Exclusive breastfeeding is communicated through various communication channels, television, radio, newspaper, magazines, new media, flairs, banners, poster, interpersonal communication, and infant welfare at hospital and antenatal classes. To actualise the desired behavioural change (Exclusive breastfeeding), it is necessary to utilise the appropriate medium (new media) since it has the capacity to reach a wider audience. The idea is that the new communication technology (new media) will permit people to become increasingly involved in one another's lives (McLuhan, 1962). Communication technologies arguably do not transmit information, they fundamentally alter the relationship between people and their world, encouraging them to construct new meanings for the things they encounter through it (McLuhan, 1962).

Social media platforms are „desperate forms of communication technology that shares features apart from being new, made possible by digitisation and being widely available for personal use as communication devices' (Nwanne, 2014, p. 34). New media (social media) play an important role and have different effects on society. New media expand and increase activity each passing day. In other words, social media operate within the daily life of the people in various ways (Seyfi & Güven, 2016), and the existence of new media has created new horizons for the ways people communicate with others (Asemah, 2011). People adopt these new media and embed them into their everyday activities, thus, these new media become parts of their social

space which play a role in creating new communication potentials and constructing new social ties (Asemah, 2011).

There is no doubt that, many citizens (urban and rural) depend on new media for information and adoption of new behaviour. The information on exclusive breastfeeding is therefore expected to flow in every new media platform like Facebook or WhatsApp chat rooms, video conferencing, YouTube, for sharing and interactivity purposes and exchanging behaviours. This will oppose the ineffective use of traditional media like television, radio, newspaper and magazine that are mostly effectively used in urban areas. This point was eloquently stated by Oruamabo (2004) when he argued that:

It would appear therefore that information packaging on breastfeeding campaign have very much skewed in favour of urban dwellers and I want to believe that these findings are not unique. The 1999 NDAS figures on the time of initiation of breastfeeding shared that 43% of the urban dwellers united breastfeeding within one hour to 30% of rural dwellers.

It is apparent from the foregoing, that social media have the potential to help expecting and lactating mothers learn the benefits of, and steps to actualise exclusive breastfeeding. However, studies in health communication in Nigeria have failed to adequately interrogate the role of digital media in the actualisation of exclusive breastfeeding. Many of the studies that we found in Nigeria focussed on media reportage of health crisis and user generated applications to monitor diseases as well as mainstream media use in learning the benefits of exclusive breastfeeding. Consequently, this study explores the use of social media for the actualisation of exclusive breastfeeding in Rivers State. To achieve the goal of the study, the paper sought to answer the below research questions.

## **Research Questions**

1. To what extent are social media applications used to communicate exclusive breastfeeding in Rivers State?
2. To what extent do age, marital status, education, and media type used for exclusive breastfeeding information and education about exclusive breastfeeding, predict the actualisation of exclusive breastfeeding in Rivers State?

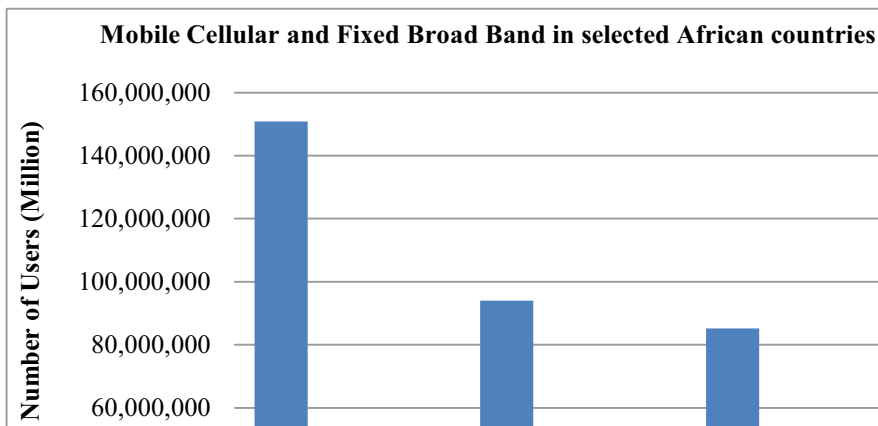
## **Literature Review and Theoretical Framework**

### **ICT Development in Nigeria**

Nigerians have embraced Information and Communication Technologies (ICTs), particularly the digital media, as sources of information and vehicles for transmitting their messages to the government. The providers of fixed line phones, the government controlled Nigerian Telecommunication (NITEL) had poor infrastructure. After the deregulation of the telecommunications sector in Nigeria in 2000, investors capitalised on the dearth of infrastructure in fixed telephony and invested in mobile telephony.

Investing in mobile phones was cheaper for both the investors and Nigerians, even though mobile phones were expensive initially. As mobile telephony slowly became affordable to almost everyone, it became instrumental in facilitating communication in Nigeria. The upgrading of mobile phones to connect to the internet has helped Nigerians send and receive information cheaply and conveniently and, Nigerians have followed a similar trajectory of using their mobile phones with internet connectivity (Author, 2015, 2017; Uwalaka & Watkins, 2017).

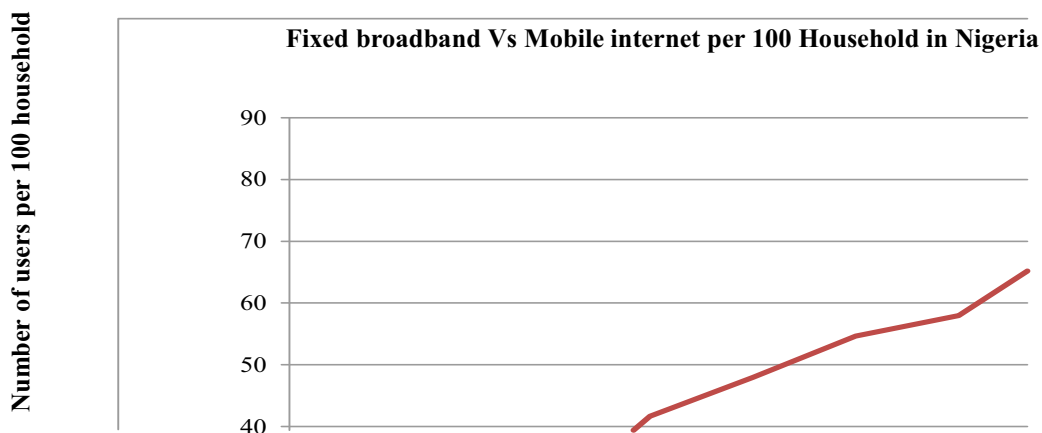
Nigeria has a high mobile phone subscription rate and mobile internet use with more than 40 percent of Nigerian households using internet-enabled mobile phones; this is a substantial amount in comparison to the 3.2 percent who have fixed broadband access (International Telecommunication Union, 2013). Nigeria also has about 71 mobile phone subscriptions per 100 households (International Telecommunication Union, 2013, 2014). Mobile surfing has resulted in a dramatic increase in basic access to information that was originally held back from the public or kept beyond their reach. According to Alozie, Akpan-Obong, and Foster (2011), „nothing has transformed Africa in recent years as much and as rapidly as the cellular phone’ (p.754). Cellular phone technology has radically altered telephony in Nigeria and one can safely say that Africans have leap frogged copper-wire technology (Alozie *et al.*, 2011).



**Fig 1: Mobile cellular, fixed telephone and broadband in selected African countries for 2016 (Uwalaka, 2017, p. 74)**

According to the International Telecommunication Union 2016 data set, Nigeria has the highest mobile phone subscription in Africa, with an estimated 151 million mobile cellular subscribers (see Figure 1). Even so, Nigeria has room for growth as its mobile phone per 100 households (82) is almost the lowest in Africa (ITU, 2016). Also, fixed telephone and fixed broadband are declining as mobile phone and internet increases. This trend means that Nigerians are comfortable with mobile internet. Figure 2 shows the trend between fixed broadband and mobile internet in Nigeria

between 2005 and 2015. It illustrates that fixed broadband has been declining while mobile internet subscription has consistently increased.



**Fig 2: Fixed broadband and mobile internet in Nigeria between 2005-2015 (Uwalaka, 2017, p. 75)**

How Nigerians' have embraced information and communication technologies (ICTs), particularly mobile internet is evidenced in the 2016 International Telecommunication Union's ICT development index (IDI). This index shows that although Nigeria is low in ICT development, Nigerians acknowledge the importance of ICT and are striving to incorporate it into their daily routines. While Nigeria is low in both ICT development index and the access sub-index for 2015 with an IDI of 2.72 (137<sup>th</sup> country) and 2.96 (147<sup>th</sup> country) respectively, it made progress in the IDI use sub-index with a use score of 2.28 (116<sup>th</sup> country). This shows that Nigerians are particularly keen to use ICT facilities, even though access to such facilities is limited. With Nigeria performing better when it comes to the „use-sub index' – this sub-index captures ICT intensity and usage indicators that is, individuals using the internet, fixed broadband subscriptions, and mobile broadband subscriptions, it means that Nigerians are yearning to take advantage of digital technology advancement.

The enthusiasm showed by Nigerians has been unable to transform into rapid ICT development because of the ICT 'environment' in Nigeria. The ICT environment in Nigeria is not as enthusiastic about ICT potential as Nigerians make of it, thereby, slowing ICT development process in Nigeria. But many Nigerians have access to ICT technologies such as the internet via a mobile phone. The internet providers in Nigeria have internet packages that are affordable to many mobile phone users. There are about 8 mobile phone network providers and these network providers provide mobile internet to Nigerians via subscription or data plans. These data plans range from a 24-hour plan to monthly plan.

One distinguishing factor of the mobile internet in developing countries such as Nigeria is that it has blurred the lacuna created by other forms of internet access: it empowers the poor to communicate and have an online presence. This means the poor are able to participate in learning about issues such as exclusive breastfeeding as well as engage in discussions and so, arguably it has increased their political engagement (Uwalaka *et al.*, 2018; Uwalaka & Watkins, 2018). The internet can be enabled in both low-end and high-end mobile phones. The low-end mobile phones usually have difficulty in displaying video, but they can still be used to upload pictures and status updates using social media platforms such as Facebook, YouTube, Twitter and mobile social networking applications such as 2go, WhatsApp, Eskimi, and Badoo. The adoption of this mobile technology by Nigerians has come about because of its ability to diffuse hierarchy and help the people follow events inside and outside the country. Its value was evident in the 2011 election when mobile technology was used to assist in the conduct of the election (Levan & Utaka, 2012).

According to 2013 research about internet and mobile users in Nigeria, of the 115 million mobile telephone subscribers in Nigeria, 35 million used their handheld devices to access internet data services (*Business Day*, 2013). Many attribute the surge of social media platforms and mobile social networking applications to factors such as the capability of mobile social networking applications to perform on lower bandwidths and to use less data; they are also a cheaper alternative than SMS (AfricaPractice, 2014; *Business Day*, 2013).

With almost 15 million<sup>1</sup> active monthly users, Facebook is still the social media with the most users in Nigeria. Facebook is followed by Eskimi, a mobile social networking application that covers job vacancies, music, and chat forums. It has about 12 million active monthly users in Nigeria. Also, 2go a social networking mobile application that allows people to connect with their friends and meet new people is widely used with about 8 million active monthly users. WhatsApp, „a cross-platform mobile social networking application that friends use to communicate and has about 7 million active monthly users in Nigeria'. Badoo, „a social networking mobile application that originally' was for dating and matchmaking but now can be used for other information sharing. It has about 4 million active monthly users in Nigeria (AfricaPractice, 2014; Author, 2017, p. 73).

## **Social Media and Exclusive Breastfeeding**

Extant health communication and breastfeeding literature have interrogated the relationship between media (mainly mainstream media) campaigns and increase in breastfeeding (exclusive or just normal breastfeeding (Nguyen *et al.*, 2016; Nzete, 2010; Parlato, 1990; Pérez-Escamilla, Curry, Minhas, Taylor, & Bradley, 2012; Sharmin *et al.*, 2016). For example, in a study that investigated media campaign on

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<sup>1</sup> Data from AfricaPractice (2014)



exclusive breastfeeding in Abia State (N=300), Nzete (2010) revealed that interpersonal communication is the most effective mode of communication in communicating the exclusive breastfeeding campaigns and the campaigns do not run adequate volumes to effect behavioural change among these women. She concluded that broadcast media are more effective and would have more impact on women than other media platforms. Based on her findings, she recommended that there should be more campaigns on exclusive breastfeeding which would aggressively persuade and motivate women embrace exclusive breastfeeding. She also suggested that the media campaigns should be reviewed from time to time, and that campaigners should adopt communication approaches and media theories that work best for their target audience.

Similarly, Sharmin *et al.* (2016) conducted a research on the barriers to exclusive breastfeeding among urban mothers. Their goal was to examine the factors influencing the duration of breastfeeding in Bangladesh population and factors influencing noncompliance to exclusive breastfeeding in Dhaka Shishu hospital from January to June 2011 (N=125). They found that termination of breastfeeding was at 3-4 months. Their data revealed that insufficient milk production due to poor position and attachment, social factors such as influence of husband and family members, act as barriers to exclusive breastfeeding. One of their major findings was that mass media and advice from health professional have a higher influence on low rate of exclusive breastfeeding. That is, the more that there are mass media campaigns encouraging people to engage in exclusive, together with increased suggestions from health professional, the higher that lactating mothers in Dhaka are likely to practice exclusive breastfeeding. They conclude that mass media should aggressively inform the audience on the need for exclusive breast feeding.

In their study that examined the impact of exposure to mass media and interpersonal counselling on exclusive breastfeeding among Vietnamese mothers (N=2045), Nguyen *et al.* (2016) found combining different behaviour change interventions (media campaigns, interpersonal counselling, etc) leads to greater changes in psychosocial factors, which in turn positively affects breastfeeding behaviours (Nguyen *et al.*, 2016, p. 713). This result is similar to the two studies above and these studies buttress the need to for a target media campaigns to maximize the chance of behavioural change in breastfeeding in general and exclusive breastfeeding in particular. Others argue that there is a need for several key „gear' to be working in „synchrony and coordination', and that an evidence based advocacy is needed to generate the necessary political will to enact legislations and policies to protect, promote and support “BF” at the hospital and community levels (Pérez-Escamilla *et al.*, 2012, p. 790). In his study, Parlato (1990) suggested that thorough social marketing research could determine why women are turning away from breastfeeding and what messages could be used to make breastfeeding a more attractive feeding option.

Digital technologies (social media) are increasingly being used in health communication and breastfeeding literature to influence the change of behaviour of

patients and lactating mothers. Digital or social media has been used to 'self-manage Type 2 diabetes' (Park, Burford, Nolan, & Hanlen, 2016, p. 1557), 'seek online health information by elders' (Magsamen-Conrad, Dillon, Billotte Verhoff, & Faulkner, 2019, p. 859), and for 'sexual health promotion among young people' (Wadham *et al.*, 2019, p. 101).

Social media have also been studied to look specifically into breastfeeding in general and exclusive breastfeeding in particular (Alianmoghaddam, Phibbs, & Benn, 2019; Jin, Phua, & Lee, 2015; Robinson *et al.*, 2019; Tomfohrde & Reinke, 2016). For example, In their study that experimented the impact of user generated content and online popularity of a pro-breastfeeding community Facebook page on female college students breastfeeding related attitude and behaviour, Jin *et al.* (2015) found that popular pages elicited significantly higher breastfeeding intention and breastfeeding self-efficacy. They suggested that the interplay of message style, message valence, and online page popularity on pro-breastfeeding attitudes strongly demonstrate the potential of 'social media as a novel vehicle for health campaigns' (Jin *et al.*, 2015, p. 6).

Furthermore, in their study that evaluated social media habits of breastfeeding mothers, Tomfohrde and Reinke (2016) showed that mothers reported frequently using social media while breastfeeding. According to the study, social media platforms in general and Facebook in particularly were sought for 'communication, entertainment, and advice among other reasons' (Tomfohrde & Reinke, 2016, p. 556). On their part, in a study that explored the influence of social media on exclusive breastfeeding practice, Alianmoghaddam *et al.* (2019) revealed that lactating mothers need reliable online infant feeding information, smart phone applications, and access to information via Facebook. They recommend that breastfeeding advocates should aggressively utilize social media to promote and support exclusive breastfeeding practice (Alianmoghaddam *et al.*, 2019).

Facebook has also been reportedly been used as a way to support breastfeeding mothers. Studying the comparison and variance between Facebook support for breastfeeding mothers and offline support and associations with breastfeeding outcome, Robinson *et al.* (2019) asserted that the highest amount of breastfeeding support they received was from Facebook support groups, in comparison to other sources of support, and that Facebook support significantly correlated with intended breastfeeding duration. They conclude that breastfeeding supports received within Facebook groups may compensate for inadequate support received within mothers' networks. It is reasonable to infer that social media support helped lactating mothers to increase their duration of breastfeeding.

Based on this review, we argue that social media have the potential to help expecting and lactating mothers learn the benefits of, and steps to actualise exclusive breastfeeding. However, studies in health communication and breastfeeding have sparingly interrogated the role of digital media in the actualisation of exclusive

breastfeeding in general and even worse in Nigeria. To bridge this research gap, this study explores the use of social media for the actualisation of exclusive breastfeeding in Rivers State, Nigeria.

## **Theoretical Foundation**

This study adopts the Integrated Model of Behaviour Prediction (IMBP) theory. According to Montano and Kasprzyk (2015), the Integrated Model of Behaviour Prediction explains that the intention to perform a behaviour is usually the strongest predictor of behavioural outcomes. Behavioural intention is then determined by an individual attitude toward the behaviour, perceived norm and personal agency (Montano & Kasprzyk, 2015; Robinson, Lauckner, Davis, Hall, & Anderson, 2019). The IMBP integrates the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) and draws constructs from other theories such as the Social Cognitive Theory.

According to the model, behaviour is likely to occur if the individual has strong intentions to perform the behaviour, necessary skills to perform the behaviour, and if the environmental constraints to performing the behaviour are absent (Fishbein & Yzer, 2003; Robinson *et al.*, 2019). Perceived norms, as measured within IMBP, includes both „injunctive' and „descriptive' norms (Robinson *et al.*, 2019). On one hand, injunctive norms are determined by an individual's normative belief; that is, whether influential persons approve or disapprove of a behaviour (Fishbein & Yzer, 2003; Montano & Kasprzyk, 2015; Robinson *et al.*, 2019). On the other hand, descriptive norms describes the perceived prevalence of a behaviour (Robinson *et al.*, 2019).

Personal agency consists of self-efficacy and perceived control. Perceived control is someone's opinion of the degree to which „certain factors make it easy versus difficult to complete the behaviour' (Robinson *et al.*, 2019, p. 3). Self-efficacy is usually operationalised as perceived behaviour control across breastfeeding and Health Communication literature (Robinson *et al.*, 2019). This study tests whether expecting and lactating mothers in Port Harcourt who actively seek exclusive breastfeeding information actualise exclusive breastfeeding. That is, like the Integrated Model of behaviour prediction, if the intention to know more about breastfeeding predicts the exclusive breastfeeding behavioural outcome of these women.

## **Methods and Data**

This study reports on a purposive cross-sectional face-to-face, paper-based survey of expecting and lactating mothers from the Model Primary Health Centre, Rumuolumeni; Model Primary Healthcare, Rumueme; and Healthcare Centre, Rumuigbo all in Port Harcourt of River State, Nigeria. The data were collected between May and July of 2018. These three hospitals were randomly selected. These

hospitals are located in a large city in Rivers State with a fair mix of people from the twenty-three Local Government Areas of Rivers State.

The participants were selected purposively among those who are either expecting or lactating. To recruit participants, flyers written in English language were distributed in the hospital wards for one week and then potential participants were contacted and provided with ethical consent forms, and information sheet and a hard copy of the survey. It took participants about 25 minutes to complete the survey, which comprised of 15 mixed questions. The completed survey was returned to one of the researchers present at the hospitals. The final sample of 200 participants was used for this study.

The quantitative method was adopted in this study as it allows for the 'generalisation of findings by including every component of population in the study' (Bryman, 2016, p. 18). The survey consisted of five sections including (1) general participant information, (2) participant's type of media used for breastfeeding information, (3) participants social media use to learn about and understand exclusive breastfeeding, (4) breastfeeding self-efficacy, and (5) comparison of information received from social media.

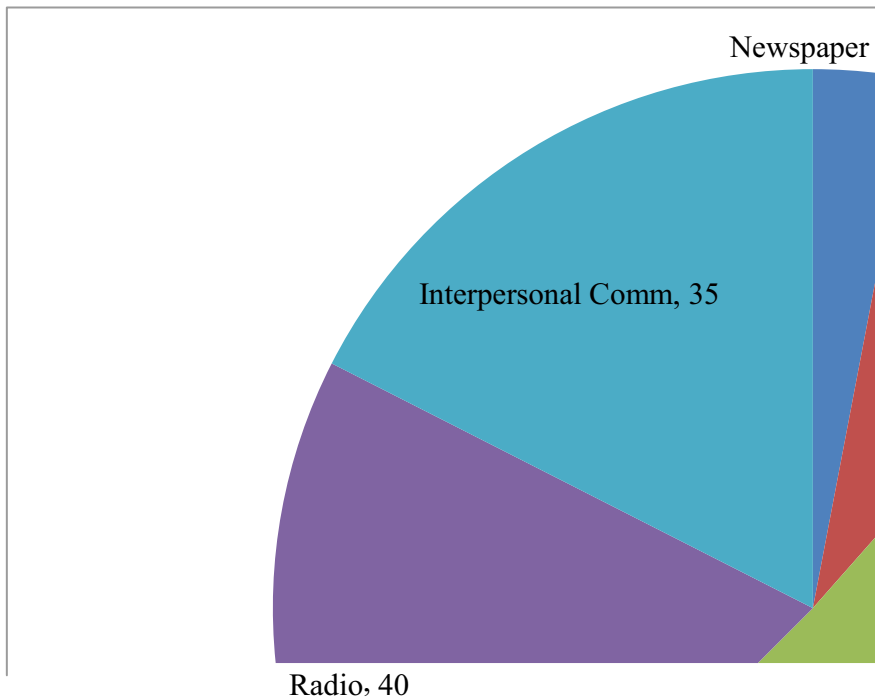
Alongside descriptive statistics, a standard regression model and correlation were used to explore the use of social media for the actualisation of exclusive breastfeeding in Rivers State. Breastfeeding self-efficacy, participants social media use for information about breastfeeding, and using social media to learn about breastfeeding were measured using a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree). Participants general information were measured as categorical variables (e.g. age, 1=18-25, 2=26-34, 3=35-43, and 4=44-above).

The independent variables are demographic variables, participants social media use for information, and social media use to learn about exclusive breastfeeding. The dependent variable is exclusive breastfeeding (actualisation). The analysis was conducted using SPSS software. We used a five point Likert scale in the questionnaire to reduce the common method bias (Miller, 1956; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), even with the new information preferring the new 4-point scale, which eliminates undecided respondents or awards them a zero score. Also, we checked for and reduced common method variance by mixing positive and negatively worded items in the questionnaire. The negatively worded items were re-coded during the data coding period to make constructs symmetric, a procedure that satisfied the statistical contention of common method bias variance.

## **Data Analysis and Interpretation**

Data reveal that 29% of the respondents for this study were 16-20 years, 63% were 21-30 years, and 8% were 31-40. Results show that 91% of the respondents owned one smart phone while 9% of the respondents owned 2 smartphones. According to Figure 3 below, 3% of the respondents of this study preferred newspaper as channel of

information on breastfeeding while 9% preferred television. However, more than half (51%) of the respondent preferred social media as their channel of choice to receive information about breastfeeding; 20% preferred radio and 18% preferred interpersonal communication. The use of social media is most efficient and easiest means of transmitting information or message on exclusive breastfeeding based on this data, and considering its asynchronous, unlimited, participatory, portability, and convergence advantages.



**Figure 3: Respondents Preferred Channel of Information on Breastfeeding**

A standard regression analysis was performed to analyse how well age, marital status, education, media type used for exclusive breastfeeding information, and education about exclusive breastfeeding predict the actualisation of exclusive breastfeeding among lactating mothers in Rivers State. In this standard regression analysis, intention to and actualisation of exclusive breastfeeding was the dependent variable and age, marital status, education, media type used for exclusive breastfeeding information, and education about exclusive breastfeeding were independent variables.

Prior to the regression analysis, preliminary analyses were conducted to check for outliers and evaluate assumptions. No observations were identified as outliers, meaning that all 200 cases were involved in further analyses. All variance inflation factor (VIF) values were well below the threshold of 10. The highest value of VIF was 1.04. This means that no values were indicative of problematic collinearity. The

inspection of the normal probability plot of standardised residuals as well as the scatterplot of standardised residuals against standardised predicted values indicated that the assumptions of normality, linearity, and homoscedasticity were met. Also, mahalanobis distance did not exceed the critical [ $x^2$  for  $df = 4$  (at  $\alpha = 0.001$ ) of 13.82] for any of the cases in the data file, indicating that multivariate outliers were not of concern, and relatively high tolerances for the predictors in the regression model indicated that multicollinearity would not interfere with the interpretation of the outcome of the regression analysis.

In combination, age, marital status, education, media type used for exclusive breastfeeding information, and education about exclusive breastfeeding accounted for a statistically significant 2.3% of variability in intention to and actualisation of exclusive breastfeeding among the research sample, adjusted [ $R^2 = .017$ ,  $F(3, 200) = 3.9$ ,  $p < .001$ ]. By Cohen's (1988) conventions, a combined effect of this magnitude can be considered "small" ( $f^2 = .023/1-.023 = 0.024$ ).

**Table 1: Regression Predicting Actualisation of Exclusive Breastfeeding**

Variables	B	Beta	T	Sig	R <sup>2</sup>	Adjusted R <sup>2</sup>
					.023	.017
Constant	2.237		25.838	.000*		
Age 1	.000	.000	-.004	.997		
Age 2	.21	.062	-5.47	.801		
Age 3	.053	.32	2.53	.001**		
Age 4	.67	1.54	21	.67		
Media use type for information SM	.063	.142	3.155	.002**		
Media use type for information radio	12.07	.67	.67	.063		
Media use type for information TV	3.75	.97	1.63	.883		
Media use type for information Newspaper	1.9	.43	-.008	.076		
Media use type for information interpersonal communication	23	.976	2.31	.06		
Education 2 – Public Servant	.027	.046	1.052	.03***		
Marital status	3.98	.065	.76	.09		
Media used for education about EBF <sup>2</sup>	.78	1.23	5.75	.000*		

Note: Regression coefficient \* $p < .001$ , \*\* $p < .005$ , \*\*\* $p < .05$

Table 1 above shows that of the twelve primary predictor variables, only four (media use type - social media, age - 35-43, education - Public Servant) made a unique statistical significant contribution to the model ( $\beta = .142$ ,  $t(200) = 3.155$ ,  $p < .005$ ), ( $\beta = .32$ ,  $t(200) = 2.53$ ,  $p < .005$ ), ( $\beta = .46$ ,  $t(200) = 1.05$ ,  $p < .05$ ), ( $\beta = 1.23$ ,  $t(200) = 5.75$ ,  $p < .001$ ). According to Table 1, the standardised beta values ( $\beta$ ) of the significant predictors show that media used for education about EBF had an impact on intention to or actualisation of exclusive breastfeeding than any other variable. Media use type, social media, had the second highest impact on intention to or actualisation of exclusive breastfeeding ( $\beta = 3.55$ ) and was followed by Age, 35-43, Education, and Public Servant, ( $\beta = 2.53$  and  $1.05$  respectively). This means that using social media to learn about exclusive breastfeeding is positively related to intention to, and actualisation of exclusive breastfeeding among the participants of this study.

### **Media Use Type and Actualisation of Exclusive Breastfeeding**

To assess the size and direction of the linear relationship between media use type, social media and the actualisation of exclusive breastfeeding among expecting and lactating mothers in Rivers State, a bivariate Pearson's product-moment correlation coefficient ( $r$ ) were calculated. The bivariate correlation between media use type, social media and intention to and or actualisation of exclusive breastfeeding is positive and strong, [ $r(200) = .65$ ,  $p < .001$ ].

This means that the more a participant reported using social media for information regarding exclusive breastfeeding, the more likely that the participant will actualise the implementation of exclusive breastfeeding. This shows that the participant is seeking information online about exclusive breastfeeding, and that the more the participant continues in this trajectory, the more she increases her self-efficacy about exclusive breastfeeding. The more the participant continue in that course, the more likely that the participant will report implementing the actualisation of exclusive breastfeeding.

### **Social Media Used for Learning and Actualization of Exclusive Breastfeeding**

To assess the size and direction of the linear relationship between social media used for learning about exclusive breastfeeding and the actualisation of exclusive breastfeeding among expecting and lactating mothers in Rivers State, a bivariate Pearson's product-moment correlation coefficient ( $r$ ) was calculated. The bivariate correlation between media use type, social media and intention to and or actualisation of exclusive breastfeeding is positive and strong [ $r(200) = .85$ ,  $p < .001$ ].

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<sup>2</sup> Exclusive Breastfeeding

This means that the more a participant reported using social media to learn about and how exclusive breastfeeding works, the more likely that the participant will implement that actualisation of exclusive breastfeeding. This shows that the participant is learning how exclusive breastfeeding works, and that the more the participant stays in this route, the more she increases her self-efficacy about exclusive breastfeeding. The more the participant continue in that path, the more likely that the participant will report implementing the actualisation of exclusive breastfeeding.

**Table 2: Correlations Coefficient for Media Use Type and Actualization of EBF**

<b>Actualization scale</b>	Pearson Correlation	1	Media use type, social media	.65**
	Sig. (2-tailed)			.000
	N	110		110
<b>Media use type, social media</b>	Pearson Correlation	.65**		1
	Sig. (2-tailed)	.000		
	N	110		110
<b>Actualization scale</b>	Pearson Correlation	1	Actualization scale	.85**
	Sig. (2-tailed)			.000
	N	110		110
<b>Learning about EBF from SM</b>	Pearson Correlation	.85**	Learning about EBF from SM	1
	Sig. (2-tailed)	.000		
	N	110		110

**Note: Correlation coefficient \*\* p<.001 level (2-tailed)**

## Discussion of Findings

This study explores the use of social media for the actualisation of exclusive breastfeeding among expecting and lactating mothers in Rivers State. The study utilised a paper-based survey of expecting and lactating mothers for the data of this study. The study found that social media are the most efficient and easiest means of transmitting information about exclusive breastfeeding. The study also found that majority of the respondents (51%) preferred social media as their channel of choice to receive information about breastfeeding.

The use of social media is most efficient and easiest means of transmitting information or message on exclusive breastfeeding because of its asynchronous, unlimited, participatory, portability, and convergence advantages. This answers the Research Question one (RQ1: To what extent are social media applications used to communicate exclusive breastfeeding in Rivers State) of this study. This finding is



similar to that of some other scholars. For example, Robinson *et al.* (2019) found that Facebook was used to support breastfeeding mothers, and that such support significantly impacts 'intended breastfeeding duration' (Robinson *et al.*, 2019, p. 1).

To answer Research Question two (RQ 2: To what extent do age, marital status, education, media type used for exclusive breastfeeding information, and education about exclusive breastfeeding predict the actualisation of exclusive breastfeeding in Rivers State?), we utilised both standard regression and correlation analyses. We found that age, marital status, education, media type used for exclusive breastfeeding information, and education about exclusive breastfeeding accounted for a statistically significant 2.3% of variability in intention to and actualisation of exclusive breastfeeding among our participants. According to Table 1 above, the standardised beta values ( $\beta$ ) of the significant predictors show that media used for education about exclusive breastfeeding had an impact on intention to and or actualisation of exclusive breastfeeding than any other variable. Media use type, social media, had the second highest impact on intention to or actualisation of exclusive breastfeeding ( $\beta=3.55$ ) and was followed by Age, 35-43, and Education, Public Servant, ( $\beta=2.53$  and  $1.05$  respectively).

This means that using social media to learn about exclusive breastfeeding is positively related to intention to, and actualization of exclusive breastfeeding among the participants of this study. Furthermore, being between 35 to 43 years in age, a Public Servant, and use social media for information and learning about exclusive breastfeeding correlate with an intention to and or the actualisation of exclusive breastfeeding. However, marital status, other age brackets and other education brackets do not appear to have an impact on the intention to and or actualisation of exclusive breastfeeding among our research sample. This means that participants who reported to use social media for information and learning about breastfeeding and are Public Servant between the ages of 35 to 43 are more likely to engage in exclusive breastfeeding. Consequently, social media use type and using social media as a source of learning about exclusive breastfeeding impacts how expecting mothers and lactating mothers actualise exclusive breastfeeding in Rivers State controlling for all other factors in the model.

This result is similar to the result of other studies (Alianmoghaddam *et al.*, 2019; Jin *et al.*, 2015; Pérez-Escamilla *et al.*, 2012; Robinson *et al.*, 2019) in that social media are helpful to expecting and lactating mothers. Social media give participants the avenue to be informed, learn, and 'tell their stories' (Jin *et al.*, 2015) about the benefits of exclusive breast feeding and how best to actualise exclusive breastfeeding. The study confirms the central thesis of Integrated Model of Behaviour Prediction (IMBP) which integrates the Theory of Planned Action and that of reasoned action. The model explains that the intention to perform a behaviour as the strongest predictor of behavioural outcomes (Fishbein & Yzer, 2003; Montano & Kasprzyk, 2015). In this study, expecting and lactating mothers desire and ability to use social media help in

their exclusive breastfeeding self-efficacy and the actualisation of exclusive breastfeeding.

## **Conclusion and Recommendation**

This study examined the use of social media for the actualisation of exclusive breastfeeding among expecting and lactating mothers in Rivers State. Based on the survey data, this study uncovered that social media are the most efficient and easiest means of transmitting information about exclusive breastfeeding. That is, expecting and lactating mothers in Port Harcourt preferred social media as their channel of choice to receive information about breastfeeding.

The results also reveal that using social media to learn about exclusive breastfeeding, being between 35 to 35 years of age, and being a Public Servant is positively correlated to intention to, and actualisation of exclusive breastfeeding in Port Harcourt metropolis. Also, this study confirms the Integrated Model of Behaviour Prediction (IMBP), and concludes that expecting and lactating mothers' desire and ability to use social media help in their exclusive breastfeeding self-efficacy and the actualisation of the exclusive breastfeeding.

We recommend that citizens should be encouraged to join medical social media groups in order to learn about health information that may be of help to them. We also recommend that expecting and lactating mothers should be encouraged to use social media platforms for health education regarding exclusive breastfeeding, and that medical professionals should be encouraged to contribute to such social media group for optimal knowledge about exclusive breastfeeding.

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