

Evaluation of the Awareness and Practice of HIV Positive Mothers towards Infant Feeding Options at Serere Health Center IV, Serere District

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ABSTRACT

This study was carried out to evaluate the knowledge and practice of HIV positive mothers towards infant feeding options at Serere Health Center IV, Serere District. The study design was a cross sectional and descriptive research. The research used both quantitative and qualitative data collection methods. The study involved a total of 30 respondents. HIV positive mothers were not fully knowledgeable about infant feeding options as only half of the respondents 15 (50%) had heard of infant feeding options for HIV positive mothers and obtained information about infant feeding options from health workers. However, most of the respondents 17 (56.7%) were not knowledgeable about the available mixed feeding options and 16 (53.3%) respondents were not aware of the importance of infant feeding options which was perhaps not surprising as most 17 (57%) had never been sensitized by health workers about infant feeding options. Respondents also had poor practices towards the use of infant feeding options and most of them 13 (43.3%) selected their current feeding option because it was cheap, 11 (36.7%) said it was readily accessible while 6 (20%) said it was culturally appropriate. However, majority of respondents 25 (83.3%) were laughed at or criticized for using infant feeding options by 12 (48%) friends, 7 (28%) community members and 6 (24%) relatives yet 25 (83.3%) reported that fear of being laughed at prevented use of using infant feeding options. Furthermore, all respondents 30 (100%) reported facing challenges in using infant feeding options including 14 (46.7%) lack of support by family members and friends, 10 (33.3%) baby not feeding well and 6 (20%) unnaturalness of some methods. We therefore, recommend national sensitization programs about MTCT of HIV as well as how this could be reduced and prevented through adequate and effective use of replacement infant feeding options, supporting health facilities offering EMTCT programs with subsidized infant feeding options such as formula in an effort to improve uptake and utilization of this safe replacement infant feeding option.

Keywords: Infant feeding, Serere District, feeding options, infant formula.

INTRODUCTION

Approximately 430,000 children under 15 years of age were newly infected with Human Immunodeficiency Virus (HIV) in 2010, and more than 71% are living in sub-Saharan Africa [1-10]. Without interventions to prevent mother-to-child transmission, 30-45% of infants born to HIV-positive mothers in developing countries become infected during pregnancy, delivery and breastfeeding [11-21]. The availability of Anti-Retroviral Therapy (ART) during the last trimester of pregnancy and delivery through Prevention of Mother to Child

Transmission (PMTCT) program reduces transmission of HIV during pregnancy, labor and delivery from 10% to 20% [22].but it did not solve the problem of infant feeding which is responsible for as much as 5-20% of infections.

The Joint United Nations Program on HIV/AIDS (UNAIDS) and two of its partners (UNICEF and WHO) recommended that HIV-infected mothers should avoid breastfeeding only when replacement feeding was affordable, feasible, acceptable, sustainable, and safe (AFASS). Non breast-fed children born to HIV

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positive women were at less risk of illness and death only if they could be ensured uninterrupted access to nutritionally adequate breast milk substitutes that were safely prepared [23-36].

Exclusive replacement (formula) feeding was the most widely used and effective method to prevent MTCT of HIV-1 through breastfeeding in resource-rich settings and was recommended in situations in which this was AFASS [37].

Exclusive breast feeding by HIV-infected mother, when compared to partial breastfeeding or Mixed Breast Feeding (MBF), had been shown to be associated with a reduced risk of transmission in the early months of postpartum and conferred a continued lower risk of transmission in babies continuing to breastfeed from 6-18 months [38].

Globally, the use of infant feeding options by HIV positive mothers was influenced by many factors including adequate knowledge about the feeding options and positive attitudes towards them [39]. According to the recent guidelines of WHO, when ARVs were not available, mothers

Study Design and Rationale

The study design was cross sectional and descriptive. This design was appropriate because the data required in the study was collected once and for all.

Study Setting and Rationale

The study was conducted at HIV clinic, Serere Health Center IV, Serere District which is located in eastern Uganda and it offers many health care services including family planning, child health services, obstetrics and emergency care, HIV/AIDS management services, general patient management, laboratory services, nutrition services, antenatal and post natal services, EMTCT program as well as RCT services among many others. The study setting was selected because it was well known to the researcher and the required number of respondents were easy to get while the problem of poor use of infant feeding options had been noted on the ground.

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should be counseled to exclusively breastfeed in the first six months of life and continue breastfeeding thereafter unless environmental and social circumstances were safe for, and supportive of, replacement feeding [40].

In Sub Saharan Africa, the proportion of HIV positive mothers who fed their infants ERF, EBF and MBF were 46.8%, 30.6%, and 15.3%, respectively. Furthermore, the predictors for choosing ERF were mode of delivery, household income and disclosure of HIV status to spouse as well adequate knowledge, attitudes and practices about infant feeding options [41]. Infant feeding behavior was a threat to child health in Uganda as statistics revealed that 33% of children under 6 months were not breast fed, 30% were under weight, 21.2% fed on over diluted fluids, 8.4% were stunted, and 7.4% children below 6 months were wasted.

Aim of the Study

The study was carried out to assess the knowledge and practice of HIV positive mothers towards infant feeding options at Serere Health Center IV, Serere District.

METHODOLOGY

Study Population

The study targeted all HIV positive mothers attending HIV clinic at Serere Health Center IV, Serere District.

Sample Size Determination

The study consisted of a sample of 30 respondents, all HIV positive mothers attending HIV clinic at Serere Health Center IV.

Sampling Procedure

The respondents were found at the HIV clinic at Serere Health Center IV. The respondents for the study were selected by the use of simple random sampling procedure. In this procedure, the researcher wrote the words YES and NO on pieces of paper, folded them, placed them in an enclosed box, shook it and then offered potential respondents an opportunity to participate in the study by picking a piece of paper from the box. Any respondent who picked a paper with the word YES written on it was requested to participate in the study. This continued until the total number of respondents to be interviewed per day was achieved.

Inclusion Criteria

The study included only HIV positive mothers attending the HIV clinic at Serere Health Center IV who were available at the clinic during the data collection days and had voluntarily consented to participate in the study.

Research Instruments

The researcher collected data from the respondents using an interview guide which was developed and pre-tested before the study. It had both closed and open-ended questions and was written in English. This tool was selected because the study population was mixed and some were literate or illiterate. The tool was translated into the most common local language by the researcher which also improved efficiency during data collection.

Data Collection Procedure

The researcher administered the questionnaires to respondents from the HIV clinic at Serere Health Center IV. Upon consenting to participate in the study, the researcher gave a questionnaire to those respondents who were literate to answer by themselves while for those who were illiterate, the researcher began interviews by asking the questions then writing the given answers on the tool. This helped

Demographic and Social Characteristics

The interview guide contained questions on demographic and social characteristics including age, tribe, religion, marital status, level of education, occupation, level of education of spouse/partner, occupation of spouse/partner, number of

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improve and maintain privacy and confidentiality. Data was collected for 3 days and depending on the availability of respondents, the researcher interviewed at least 10 respondents per day.

Data Analysis and Presentation

The study data was analyzed by the use of SPSS version 22 after which the collected data was transferred to Microsoft Excel 2013 to present the data in tables, graphs and pie charts.

Ethical Considerations

A letter of introduction was obtained from the head of department, Kampala International University, Western Campus, introducing the researcher to medical director of Serere Health Center IV and seeking permission to carry out the study. After permission was granted, the medical director introduced the researcher to the in-charge of the HIV clinic who introduced the researcher to the respondents. The study only commenced after the objectives of the study had been clearly and well explained to participants and they had understood and voluntarily consented to participate in the study. Respondents were assured of maximum confidentiality of all the information given and numbers were used instead of respondents' names.

RESULTS

children and income level of the household. These were assessed to determine their relationship with the knowledge and practice of HIV positive mothers towards infant feeding options at Serere Health Center IV, Serere District. The results were presented as follows:

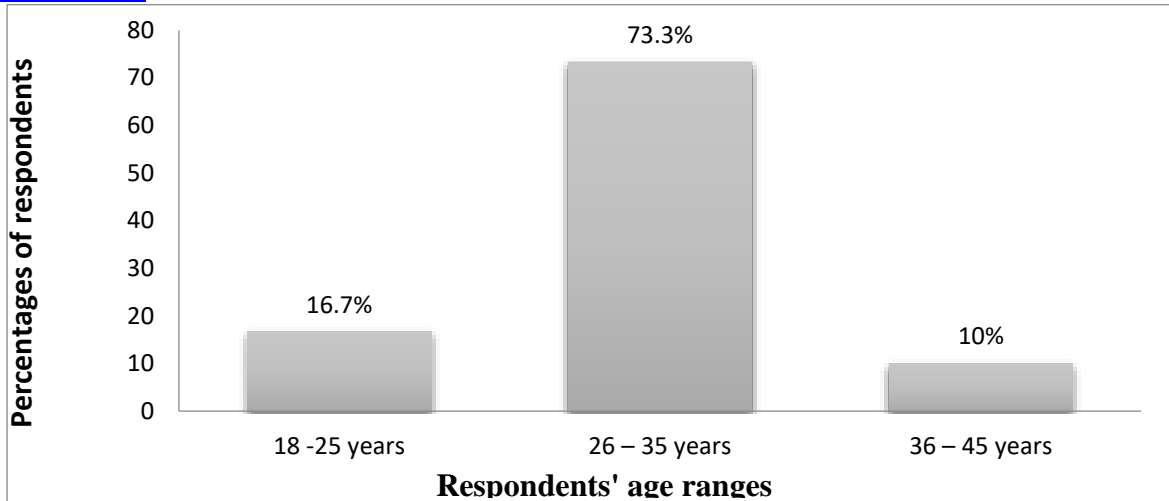


Figure 1: Distribution of respondents by age, n=30

The majority of respondents 22 (73.3%) were aged between 26 - 35 years, 5 (16.7%)

while the least 3 (10%) were aged between 36 - 45 years.

Table 1: Distribution of respondents by marital status, n=30

Marital status	Frequency	Percentage (%)
Single	6	20
Married	20	66.7
Divorced	4	13.3
Total	30	100

The majority of respondents 20 (67%) were married, 6 (20%) were single while the least 4 (13%) were divorced.

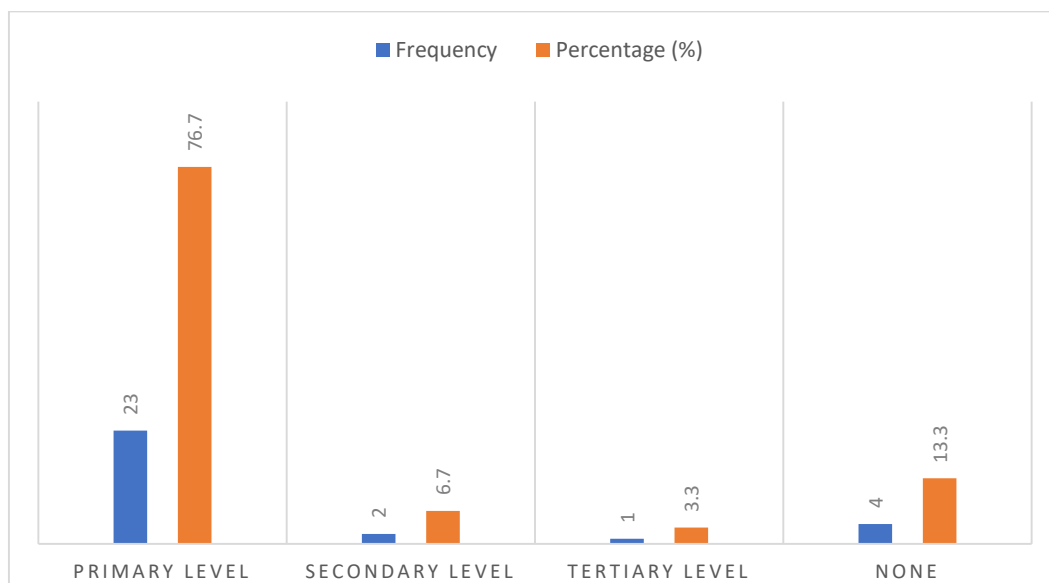


Figure2: Distribution of respondents by level of education, n=30

The majority of respondents 23 (76.7%) attained primary level education, 2 (6.7%) attained secondary level education while

the least 1 (3.3%) attained tertiary level education.

Table 2: Distribution of respondents by occupation, n=30

Occupation	Frequency	Percentage (%)
House wife	15	50
Self employed	10	33.3
Civil servant/professional	2	6.7
Peasant farmer	3	10
Total	30	100

Results showed that half of the respondents 15 (50%) were house wives, followed by 10 (33.3%) who were self-

employed. 3 (10%) were peasant farmers while the least 2 (6.7%) were civil servants/professionals.

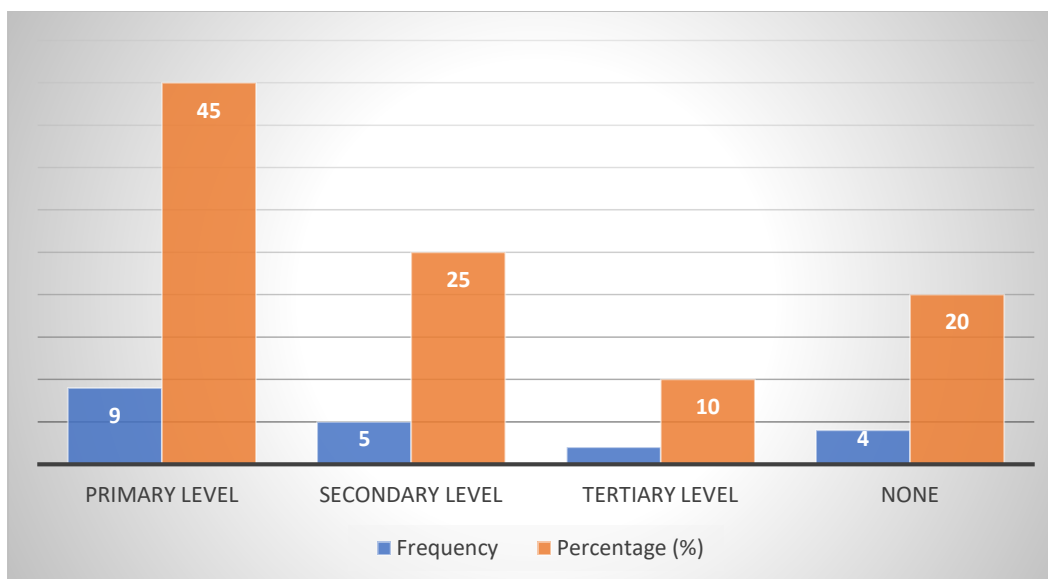


Figure3: Distribution of respondents by level of education of spouse, n=20

Most respondents' spouses/partners 9 (45%) attained primary level education, 5 (25%) attained secondary level education, 4

(20%) did not attain any formal education while the least 2 (10%) attained tertiary level education.

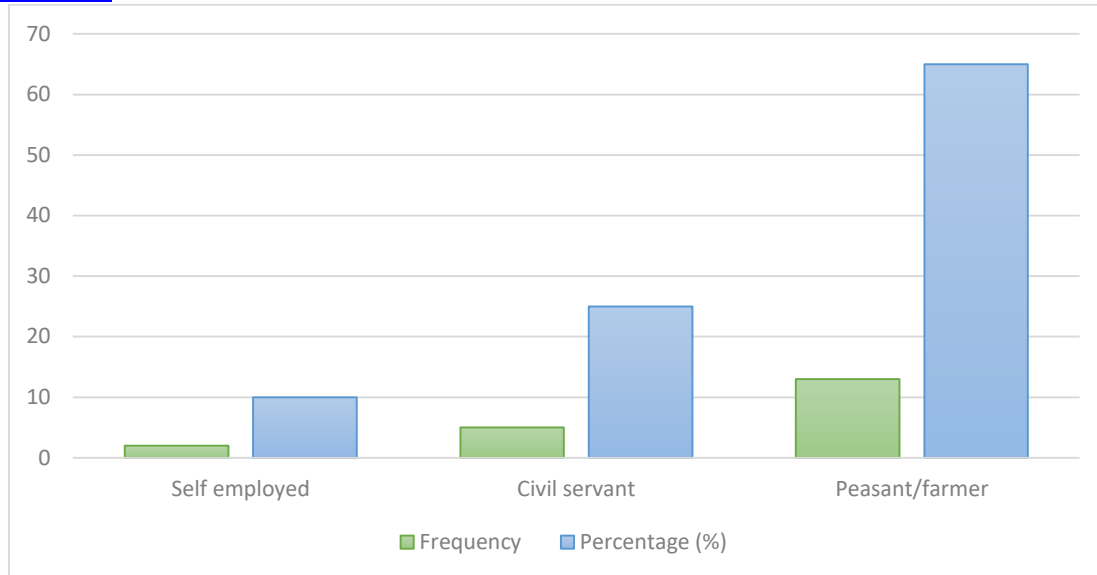


Figure4: Distribution of respondents by occupation of spouse, n=20

The majority of respondents' spouses/partners were civil servants while the least 2 (10%) were self-employed. 13 (65%) were peasant/farmers, followed by 5 (25%) who

Table 3: Distribution of respondents by number of children, n=30

Number of children	Frequency	Percentage (%)
1 - 2 children	6	20
3 - 4 children	10	33.3
5 children and above	14	46.7
Total	30	100

Most respondents 14 (46.7%) had 5 children and above, followed by 10 (33.3%) had 3 - 4 children while the least 6 (20%) had 1 - 2 children.

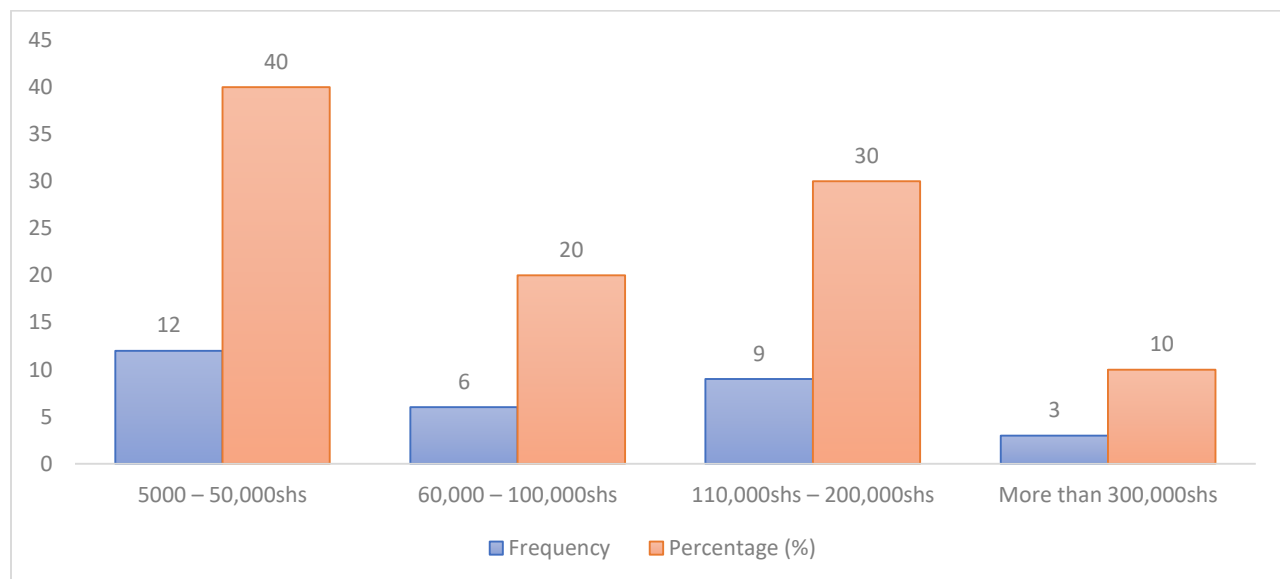


Figure 5: Distribution of respondents by income level of household income, n=30

Half of the respondents 15 (50%) reported having an income of between 5000 - 50,000shs, followed by 9 (30%) who had an income level of 110,000shs - 200,000shs,

6 (20%) reported having 60,000shs - 100,000shs while the least 3 (10%) had an income level of more than 300,000shs.

Knowledge of HIV Positive Mothers towards Infant Feeding Options

Table 4: Ever heard about infant feeding options, n=30

Responses	Frequency	Percentage (%)
Yes	15	50
No	15	50
Total	30	100

Half of the respondents 15 (50%) had ever heard about infant feeding options for HIV positive mothers while the other half 15 (50%) had never heard about infant feeding options. The respondents who had ever

heard about infant feeding options 15 (100%) obtained information about infant feeding options for HIV positive mothers from health workers.

Table 5: Whether respondents were knowledgeable about the available mixed feeding options, n=30

Responses	Frequency	Percentage (%)
Yes	13	57
No	17	43
Total	30	100

The majority of respondents 17 (57%) were not knowledgeable about the available mixed feeding options while only 13 (43%)

were knowledgeable about the available mixed feeding options.

Table 6: Infant feeding options respondents were aware of, n=13

Infant feeding options	Frequency	Percentage (%)
Exclusive breast feeding	3	27.1
Exclusive replacement feeding	5	38.4
Animal milk	2	15.4
Formula	3	27.1
Total	13	100

Out of the 13 respondents who were aware of the available infant feeding options, only 5(38.4%) were aware of exclusive replacement feeding, followed by 3(27.1%)

who mentioned formula and exclusive breast feeding respectively while the least 2(15.4%) mentioned animal milk.

Table 7: Awareness of importance of infant feeding options, n=30

Responses	Frequency	Percentage (%)
Yes	13	46.7
No	17	53.3
Total	30	100

The majority of respondents 16 (53.3%) were not aware of the importance of infant feeding options while the least 14(46.7%)

were aware and they said that infant feeding options protected the baby from getting HIV infection.

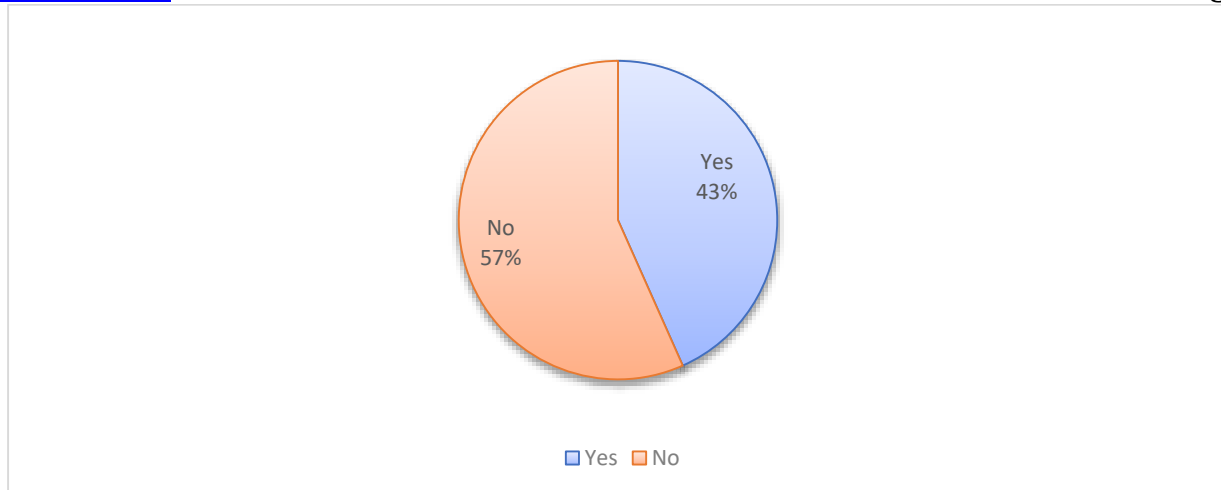


Figure6: Ever been sensitized by health workers about infant feeding options, n=30

The majority of respondents 17 (57%) had never been sensitized by health workers

about infant feeding options while the least 13 (43%) had ever been sensitized.

Practices of HIV Positive Mothers towards Infant Feeding Options

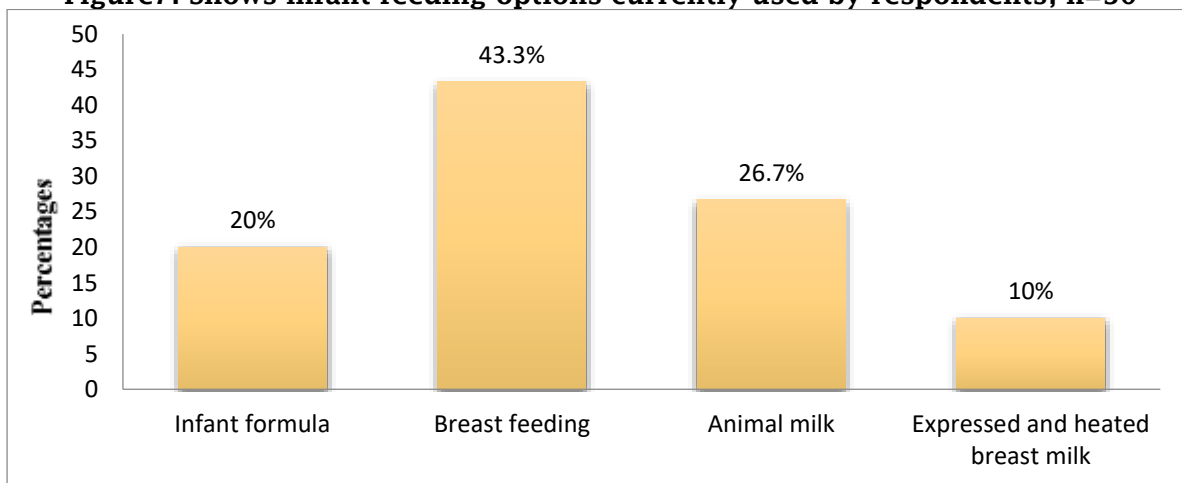
Table8: Shows preferred method of infant feeding options by respondents, n=30

Preferred method	Frequency	Percentage (%)
Expressed breast milk and heated breast milk	2	6.7
Animal milk	8	26.7
Infant formula	3	10
Wet nursing	4	13.3
Others (specify) Breast feeding	13	43.3
Total	30	100

Most respondents 13 (43.3%) reported that their preferred method of infant feeding options was breast feeding, followed by 8

(26.7%) who preferred animal milk, 4 (13.3%) mentioned wet nursing.

Figure7: Shows infant feeding options currently used by respondents, n=30



Most respondents 13 (43.3%) were currently using breast feeding, followed by 8 (26.7%) who were using animal milk, 6

(20%) were using infant formula while the least 3 (10%) expressed and heated breast milk.

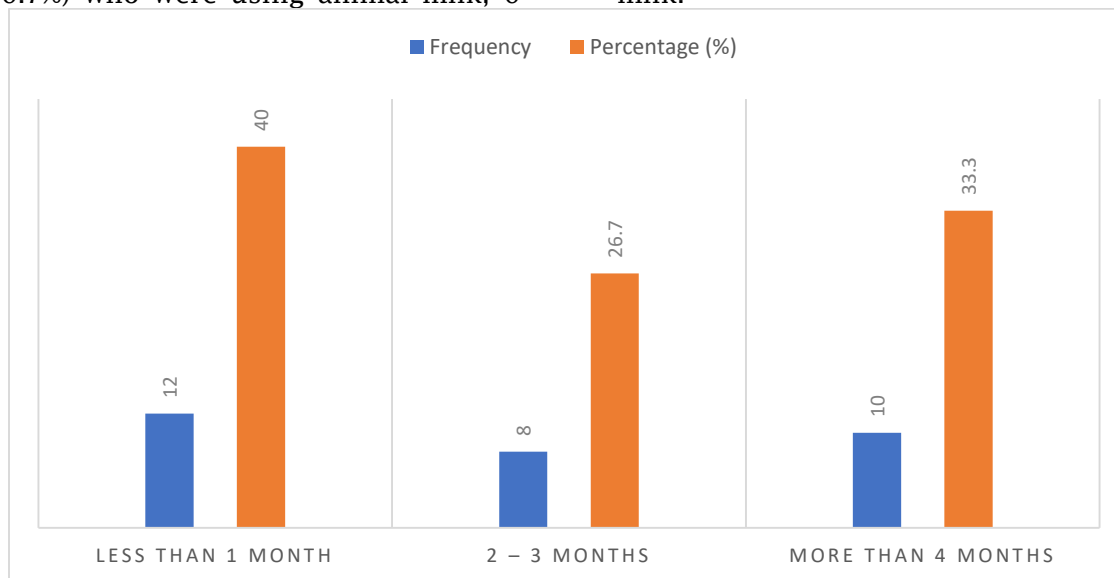


Figure8: Duration of using infant feeding options, n=30

Most respondents 12 (40%) had been using infant feeding options for less than 1 month, followed by 10 (33.3%) had been using infant feeding options for more than

4 months while the least 8 (26.7%) had been using infant feeding options for between 2 - 3 months.

Table 9: Shows reasons for choosing the particular feeding option, n=30

Reasons	Frequency	Percentage (%)
It is cheap	13	43.3
It is readily accessible	11	36.7
It is culturally appropriate	6	20
Total	30	100

Most respondents 13 (43.3%) said they chose the particular feeding option because it was cheap, followed by 11

(36.7%) who said it was readily accessible while the least 6 (20%) who said it was culturally appropriate.

Table 10: Whether respondents were laughed at or criticized for using infant feeding options n=30

Responses	Frequency	Percentage (%)
Yes	25	83.3
No	5	16.7
Total	30	100

Most respondents 25 (83.3%) reported that they were laughed at or criticized for using

infant feeding options while the least 5 (16.7%) were not laughed at or criticized.

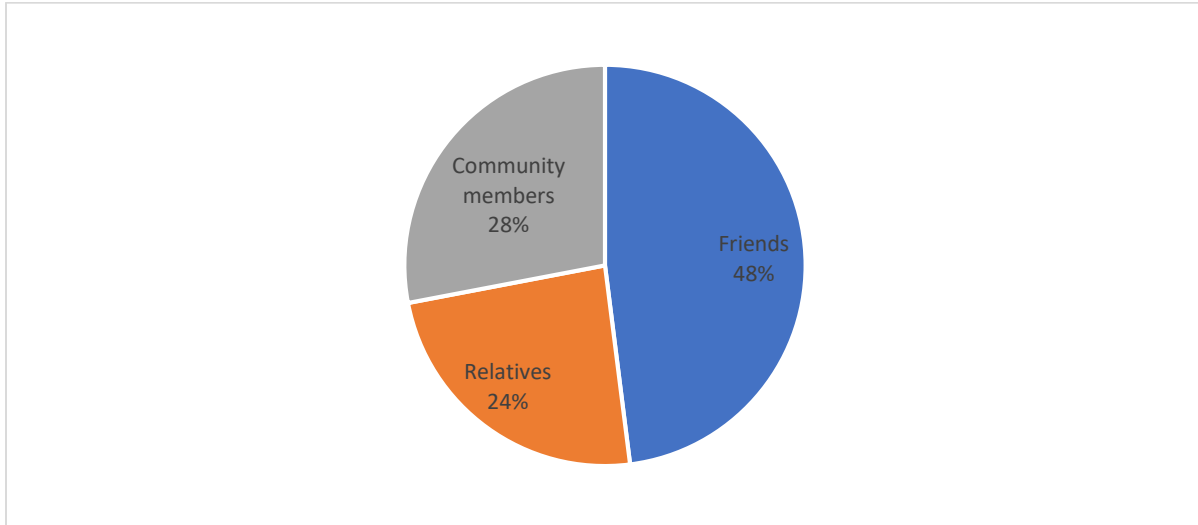


Figure9: Who laughed at or criticized respondents for using infant feeding options, n=25

Out of the 25 respondents who reported that they were laughed at or criticized for using infant feeding options, most 12 (48%) said they were laughed at or

criticized by friends, 7 (28%) were laughed at or criticized by community members while the least 6 (24%) were laughed at or criticized by relatives.

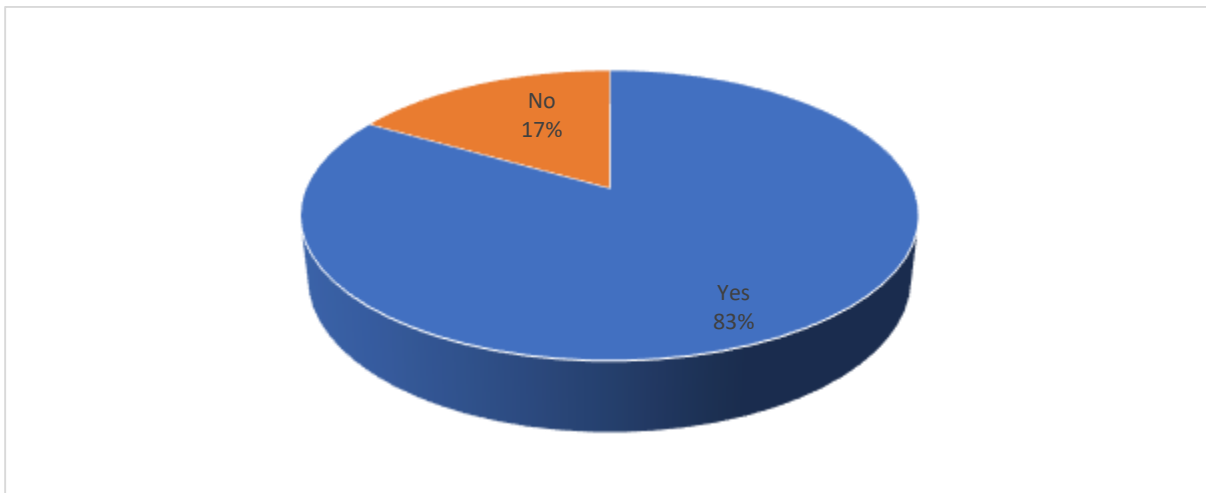


Figure10: Whether fear of being laughed at prevented use of using infant feeding options, n=30

Most respondents 25 (83.3%) reported that fear of being laughed at prevented use of using infant feeding options while the

least 5 (16.7%) said fear of being laughed at did not prevent use of using infant feeding options.

Table 11: Whether respondents faced any challenges in using infant feeding options, n=30

Responses	Frequency	Percentage (%)
Yes	30	100
No	0	0
Total	30	100

All of the respondents 30 (100%) reported facing challenges in using infant feeding options.

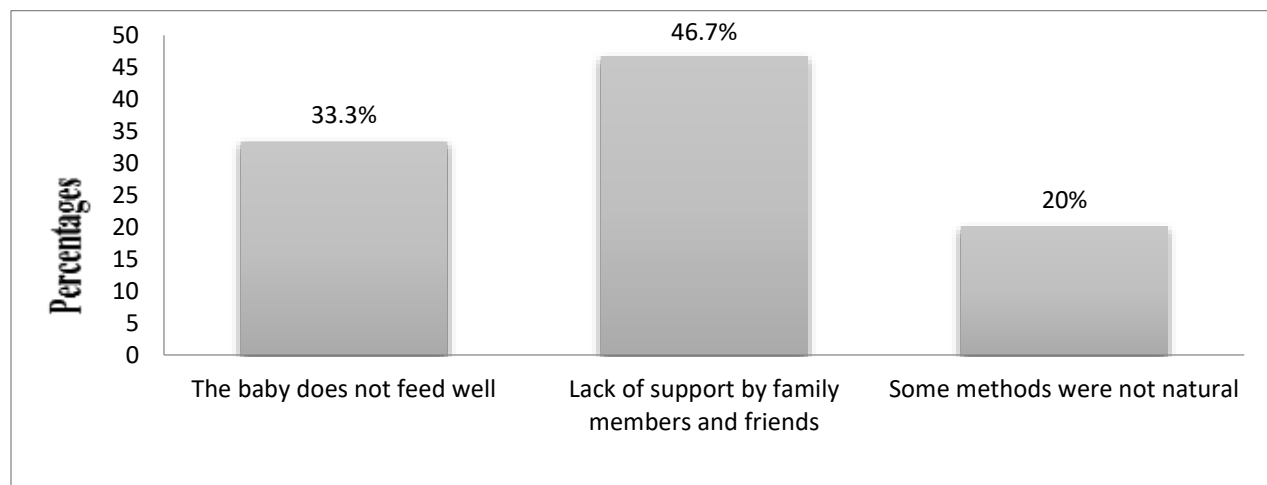


Figure 11: Shows challenges faced while using infant feeding options

Most respondents 14 (46.7%) mentioned lack of support by family members and friends in using infant feeding options as their biggest challenge, followed by 10

(33.3%) who said the baby did not feed well while the least 6 (20%) reported that some methods were not natural.

DISCUSSION

The respondents’ socio demographic characteristics were assessed as they gave an insight into the respondents’ social and economic status. The results were presented as follows:

The majority of respondents 22 (73.3%) were aged between 26 - 35 years. This demonstrated that most respondents were mature enough to understand and appreciate the importance of using infant feeding options by HIV positive mothers.

The majority of respondents 20 (67%) were married, which implied that since they were married, they would be able to count on the physical, emotional and financial support of their partners and ensure adequate access to and utilization of infant feeding options for HIV positive mothers. However, this was not the case as most respondents did not receive support from their partners.

The majority of respondents 23 (76.7%) attained primary level education while most respondents’ spouses/partners 9

(45%) attained primary level education. This demonstrated that most respondents attained a low level of education and it was assumed that this could potentially limit their awareness and knowledge on the importance of effectively utilizing infant feeding options for babies born to HIV positive mothers.

Half of the respondents 15 (50%) were house wives. This showed that most respondents relied on their husbands to provide all the necessary resources required to access and use infant feeding options. It also demonstrated that since most respondents did not have any economic activity which moved them from home, they had ample time to adequately care for their infants and ensure that infant feeding options were used safely and effectively.

The majority of respondents’ spouses/partners 13 (65%) were peasant/farmers. This demonstrated that most respondents’ husbands/partners

were not engaged in an economic activity which was not surprising as most had only attained a primary level education. However, this had various implications towards the successful provision of infant feeding options as their wives were not working and relied on their husbands to provide, a situation which could lead to poor utilization of infant feeding options as required by health workers.

Most respondents 14 (46.7%) had 5 children and above, which implied that since they had more than 1 child, they would be more experienced on how to adequately care for an infant as they would possess more experience.

Half of the respondents 15 (50%) reported having an income of between 5000 - 50,000shs. This demonstrated that most respondents' households had a very low income level which was perhaps not surprising due to the fact that most wives were not working and most husbands were only peasant/farmers. However, the low income levels of the household had serious implications to the adequate access to and utilization of health care services as well infant feeding options.

Half of the respondents 15 (50%) had heard about infant feeding options for HIV positive mothers. The respondents who had heard about infant feeding options 15 (100%) obtained information about infant feeding options for HIV positive mothers from health workers. This showed that there was still a knowledge deficit among HIV positive mothers as only half had heard of infant feeding options. This study was contrary to Dagnachew *et al.* [40] who reported in a study about infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Gondar Town health institutions, Northwest Ethiopia, the majority lacked sufficient knowledge about infant feeding options.

The majority of respondents 17(56.7%) were not knowledgeable about the available mixed feeding options which implied that since most respondents were not knowledgeable about the available mixed feeding options, it could translate into poor and ineffective utilization of

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these feeding options. This study was not different from that by Mohammed *et al.* [42] who documented in their study about infant feeding options, practices and determinants of HIV-positive mothers in Abuja, Nigeria that the majority of mothers interviewed had inadequate knowledge about infant feeding options. Only 21% of the respondents could mention the various infant feeding options such as heating expressed milk and wet nursing.

Most respondents 5(38.4%) were aware of exclusive replacement feeding, followed by 3(27.1%) who mentioned formula and exclusive breast feeding respectively while the least 2(15.4%) mentioned animal milk. The respondents who were aware of the importance of infant feeding options 14(46.7%) said infant feeding options protected the baby from getting HIV infection. This demonstrated that some respondents were aware of some types of mixed infant feeding options which implied that it could lead to improved utilization of these methods. This study was in line with Wachira *et al.* [43] who reported in a study about an assessment of knowledge, attitudes and practices of infant feeding in the context of HIV in Western Kenya that the majority of respondents had some knowledge about infant feeding options and up to 85% knew of breastfeeding as a route of HIV transmission. However, breastfeeding was the norm although exclusive breastfeeding was not practiced and cow's milk, the main breast milk substitute, was reported as being given to infants as early as two weeks.

Results showed that 16 (53.3%) respondents were not aware of the importance of infant feeding options which implied that due to lack of awareness of this importance, mothers may not adequately implement and utilize infant feeding options.

The majority of respondents 17 (57%) had never been sensitized by health workers about infant feeding options which implied that since most respondents missed out on the chance to be sensitized by health workers, they would not have positive attitudes and good practices

towards utilization of infant feeding options.

Most respondents 13 (43.3%) said they chose the particular feeding option because it was cheap, followed by 11 (36.7%) who said it was readily accessible while the least 6 (20%) who said it was culturally appropriate. This demonstrated that respondents chose infant feeding options due to various reasons. This study was contrary to Rendani *et al.* [44] whose study about infant-feeding practices and associated factors of HIV-positive mothers at GertSibande, South Africa revealed that the majority of mothers interviewed had poor practices towards the use of infant feeding options.

Most respondents 25 (83.3%) reported that they were laughed at or criticized for using infant feeding options. This demonstrated that most respondents were criticized by community members for the infant feeding option they were currently using, yet this criticism contributed to poor utilization of the infant feeding options. This study was in line with Kuhn *et al.* [45] who documented in a study about the effects of early, abrupt weaning on HIV-free survival of children in Zambia that most HIV positive mothers interviewed had poor practices towards infant feeding options. This was attributed to fears of being laughed at and stigmatized by family, neighbors and friends because of the use of the infant feeding options [45, 46, 47, 48, 49, 50, 51].

Out of the 25 respondents who reported that they were laughed at or criticized for using infant feeding options, most 12 (48%) said they were laughed at or criticized by friends, 7 (28%) were laughed at or criticized by community members while the least 6 (24%) were laughed at or criticized by relatives. This also demonstrated that family, neighbors and friends stigmatized the HIV positive mothers when using the recommended infant feeding options and this contributed to poor utilization of the methods. This study was in agreement with Kuhn *et al.* [45] who documented in a study about the effects of early, abrupt

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weaning on HIV-free survival of children in Zambia that most HIV positive mothers interviewed had poor practices towards infant feeding options. This was attributed to fears of being laughed at and stigmatized by family, neighbors and friends because of the use of the infant feeding options.

Most respondents 25 (83.3%) reported that fear of being laughed at prevented use of using infant feeding options. This demonstrated that most respondents' fear of being stigmatized was a serious reason for lack of utilization of the recommended infant feeding options. This study was in line with Athena *et al.* [39] whose study about the prevention of human immunodeficiency virus-1 transmission to the infant through breastfeeding revealed that the majority of respondents had negative attitudes towards infant feeding options. Most mothers interviewed had negative attitudes towards feeding options such as wet nursing and milk banks and this was due to the social, cultural and psychological complexity of these infant feeding practices.

All of the respondents 30 (100%) reported facing challenges in using infant feeding options. Most respondents 14 (46.7%) mentioned lack of support by family members and friends in using infant feeding options as their biggest challenge, followed by 10 (33.3%) who said the baby did not feed well while the least 6 (20%) reported that some methods were not natural. This showed that respondents using infant feeding options faced various challenges in using these methods and this could greatly affect the use utilization of infant feeding methods. This study was in line with Maru *et al.* [45] who contributed in their study about infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia that HIV positive mothers had poor practices towards the use of infant feeding options. Mothers reported prevalent beliefs that expression of breast milk and heating breast milk were unnatural.

CONCLUSION

In conclusion, HIV positive mothers were not fully knowledgeable about infant feeding options as only half of the respondents had heard about infant feeding options for HIV positive mothers and obtained information about infant feeding options from health workers. However, most respondents were not knowledgeable about the available mixed feeding options and most were not aware of the importance of infant feeding options which was perhaps not surprising as most had never been sensitized by health workers about infant feeding options.

Respondents also had poor practices towards the use of infant feeding options

and most chose their current feeding option because it was cheap, readily accessible and was culturally appropriate. However, the majority of respondents were laughed at or criticized for using infant feeding options by friends, community members and relatives yet most reported that fear of being laughed at prevented use of using infant feeding options. Furthermore, all respondents reported facing challenges in using infant feeding options including lack of support by family members and friends, baby not feeding well and unnaturalness of some methods.

REFERENCES

- [1]. Adejuyigbe, E. and Odebiyi, A. (2014). Parental HIV sero discordance: implications for the care of the HIV seropositive child in a poor-resource setting. *AIDS Care*, 18:537-543.
- [2]. Obeagu, E. I., Ogbonna, U. S., Nwachukwu, A. C., Ochiabuto, O., Enweani, I. B. and Ezeoru, V. C. (2021). Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. *Journal of Pharmaceutical Research International*, 33(4), 10-19.
- [3]. Omo-Emmanuel, U. K., Chinedum, O. K., Michael, O. and Negedu-momoh, O. (2017). Evaluation of laboratory logistics management information system in HIV/AIDS comprehensive health facilities in Bayelsa State, Nigeria. *Int J Curr Res Med Sci*, 3(1), 21-38.
- [4]. Leticia, O. I., Ugochukwu, A., Ifeanyi, O. E., Andrew, A. and Ifeoma, U. E. (2014). The correlation of values of CD4 count, platelet, Pt, Aptt, fibrinogen and factor VIII concentrations among HIV positive patients in FMC owerri. *IOSR Journal of Dental and Medical Sciences*, 13(9), 94-101.
- [5]. Eguogwu, F. C., Ugwu, O., Amadi, N. C., Ike, O. C., Ohale, A. C., Okwara, J. and Udeogu, C. H. (2021). Levels of Maternal Serum Alpha-fetoprotein and Beta Human Chorionic Gonadotropin in HIV Seropositive Pregnant Women Attending Antenatal Care at Nnamdi Azikiwe University Teaching Hospital Nnewi, Nigeria. *Journal of Advances in Medicine and Medical Research*, 33(12), 32-38.
- [6]. Omo-Emmanuel, U. K., Ochei, K. C., Osuala, E. O., Obeagu, E. I. and Onwuasoanya, U. F. (2017). Impact of prevention of mother to child transmission (PMTCT) of HIV on positivity rate in Kafanchan, Nigeria. *Int. J. Curr. Res. Med. Sci*, 3(2), 28-34.
- [7]. Izuchukwu, I. F., Ozims, S. J., Agu, G. C., Obeagu, E. I., Onu, I., Amah, H. and Arunsi, M. O. (2016). Knowledge of preventive measures and management of HIV/AIDS victims among parents in Umuna Orlu community of Imo state Nigeria. *Int. J. Adv. Res. Biol. Sci*, 3(10), 55-65.
- [8]. Obeagu, E. I., Okeke, E. I., Anonde, A. C. (2016). Evaluation of haemoglobin and iron profile study among persons living with HIV in Umuahia, Abia state, Nigeria. *Int. J. Curr. Res. Biol. Med*, 1(2), 1-5.
- [9]. Obeagu, E. I., Alum, E. U and Obeagu, G. U. (2023). Factors Associated with Prevalence of HIV Among Youths: A Review of Africa

- Perspective. *Madonna University journal of Medicine and Health Sciences*.3 (1), 13-18.
- [10]. Obeagu, E. I. (2023). A Review of Challenges and Coping Strategies Faced by HIV/AIDS Discordant Couples. *Madonna University journal of Medicine and Health Sciences*.3 (1), 7-12.
- [11]. Coutsoudis, A., Pillay, K., Spooner, E., Kuhn, L. and Coovadia, H. M. (2010). Influence of infant-feeding patterns on early mother-to-child transmission of HIV-1 in Durban, South Africa: a prospective cohort study. South African Vitamin A Study Group. *Lancet*, 354:471-476.
- [12]. Obeagu, E. I., Okoroiwu, I. L, Nwanjo., H. U. and Nwosu, D. C. (2019). Evaluation of interferon-gamma, interleukin 6 and interleukin 10 in tuberculosis patients in Umuahia. *Ann Clin Lab Res*, 7(2), 307.
- [13]. Mercy, O., Ifeanyi, O. E., Vincent, C. C. N. and Prayer, N. (2020). Association of ABO blood group with HIV infection. *J Infect Dis Med Microbiol*, 1(1), 1-7.
- [14]. Obeagu, E. I., Eze, V. U., Alaebob, E. A. and Ochei, K. C. (2016). Determination of haematocrit level and iron profile study among persons living with HIV in Umuahia, Abia State, Nigeria. *J BioInnovation*, 5, 464-71.
- [15]. Obeagu, E. I., Okoroiwu, I. L, Nwanjo, H. U and Nwosu, D. C. (2019). Evaluation of haematological parameters of tuberculosis patients in Umuahia. *Eur. J. Pharm. Med. Res*, 6(7), 693-699.
- [16]. Odo, M., Ochei, K. C., Obeagu, E. I., Barinaadaa, A., Eteng, U. E., Ikpeme, M. and Paul, A. O. (2020). TB Infection Control in TB/HIV Settings in Cross River State, Nigeria: Policy Vs Practice.
- [17]. Ofor, I. B., Obeagu, E. I., Ochei, K. C. and Odo, M. (2016). Evaluation of lipids and protein profiles in tuberculosis (Tb) patients on antituberculosis therapy in general hospital Umuguma, Owerri. *Int. J. Curr. Res. Chem. Pharm. Sci*, 3(2), 20-28.
- [18]. Offie, D. C., Obeagu, E. I., Akueshi, C., Njab, J. E., Ekanem, E. E., Dike, P. N. and Oguh, D. N. (2021) Facilitators and Barriers to Retention in HIV Care among HIV Infected MSM Attending Community Health Center Yaba, Lagos Nigeria. *Journal of Pharmaceutical Research International*, 33(52B), 10-19.
- [19]. Olusola-Falae, B., Obeagu, E. I., Odo, M., Ochei, K. C., Solanke, E. and Idaboh, T. (2016). Impact of community-based tuberculosis care interventions on TB Case detection in Nigeria-What works and what does not. *Int J Adv Multidiscip Res*, 3, 30-39.
- [20]. Obeagu, E. I and Obeagu, G. U. (2015). Effect of CD4 Counts on Coagulation Parameters among HIV Positive Patients in Federal Medical Centre, Owerri, Nigeria. *Int. J. Curr. Res. Biosci. Plant Biol*, 2(4), 45-49.
- [21]. Nduati, R., John, G., Mbori, D., Richardson, B., Overbaugh, J., Mwatha, A., Ndinya-Achola, J., Bwayo, J., Onyango, F. E., Hughes, J. and Kreiss, J. (2009). Effect of breastfeeding and formula feeding on transmission of HIV-1: a randomized clinical trial. *JAMA*, 283:1167-1174.
- [22]. Suryavanshi, N., Jonnalagadda, S., Erande, A. S., Sastry, J., Pisal, H., Bharucha, K. E., Shrotri, A., Bulakh, P. M., Phadke, M. A., Bollinger, R. C. and Shankar, A. V. (2013). Infant feeding practices of HIV positive mothers in India. *Journal of Nutrition*, 133:1326-1331.
- [23]. Molloy. S. F., Ross, B., Kanyama, C., Mfinanga, S., Lesikari, S., Heyderman, R. S. and Bicanic, T. (2021). Fungal burden and raised intracranial pressure are independently associated with visual loss in human immunodeficiency virus-associated cryptococcal meningitis. In *Open forum infectious diseases*. 8 (4): ofab066). US: Oxford University Press.

- [24]. Chinedum, O. K., Ifeanyi, O. E., Emmanuel, A., Ndidiamaka, E. I. and Stella, E. I. (2018). A review on tuberculosis in human immunodeficiency virus infection. *Int. J. Curr. Res. Med. Sci*, 4(1), 51-80.
- [25]. Loevinsohn, G., Kigozi, G., Kagaayi, J., Wawer, M. J., Nalugoda, F., Chang, L. W. and Grabowski, M. K. (2021). Effectiveness of voluntary medical male circumcision for human immunodeficiency virus prevention in Rakai, Uganda. *Clinical Infectious Diseases*, 73(7), e1946-e1953.
- [26]. Obeagu, E. I., Scott, G. Y., Amekpor, F., Ofodile, A. C., Edoho, S. H. and Ahamefula, C. (2022). Prevention of New Cases of Human Immunodeficiency Virus: Pragmatic Approaches of Saving Life In Developing Countries. *Madonna University journal of Medicine and Health Sciences*. 2(3), 128-134.
- [27]. Obeagu, E. I., Okwuanaso, C. B., Edoho, S. H. and Obeagu, G. U. (2022). Under-nutrition among HIV-exposed Uninfected Children: A Review of African Perspective. *Madonna University journal of Medicine and Health Sciences*. 2(3), 120-127.
- [28]. Jakheng, S. P. E. and Obeagu, E. I. (2022). Seroprevalence of human immunodeficiency virus based on demographic and risk factors among pregnant women attending clinics in Zaria Metropolis, Nigeria. *J Pub Health Nutri*. 5 (8), 137.
- [29]. Akandinda, M., Obeagu, E. I., Madekwe, C. C. and Nakyeyune, S. (2022). A Review on Factors Associated with HPV Vaccination in Africa. *Madonna University journal of Medicine and Health Sciences*. 2(3), 1-5.
- [30]. Ijeoma, O. L., Ifeoma, U. E., Emmanuel, O., Ifeanyi, A. U. and Andrew, A. (2014). Comparative study of Cd8+ T-Cell counts and leukopoietin levels in human immunodeficiency virus infection in Umuahia, Nigeria. *IOSR J Dental Med Sci*, 13, 102-110.
- [31]. Nwosu, D. C., Obeagu, E. I., Nkwocha, B. C., Nwanna, C. A., Nwanjo, H. U., Amadike, J. N. and Nwankpa P. (2016). Change in Lipid Peroxidation Marker (MDA) and Non enzymatic Antioxidants (VIT C & E) in HIV Seropositive Children in an Urban Community of Abia State. Nigeria. *J. Bio. Innov*, 5(1), 24-30.
- [32]. Chinedu, K., Takim, A. E., Obeagu, E. I., Chinazor, U. D., Eloghosa, O., Ojong, O. E. and Odunze, U. (2017). HIV and TB co-infection among patients who used Directly Observed Treatment Short-course centres in Yenagoa, Nigeria. *IOSR J Pharm Biol Sci*, 12(4), 70-5.
- [33]. Obiomah, C. F., Obeagu, E. I., Ochei, K. C., Swemm, C. A. and Amachukwu, B. O. (2018). Hematological indices o HIV seropositive subjects in Nnamdi Azikiwe University teaching hospital (NAUTH), Nnewi. *Ann Clin Lab Res*, 6(1), 1-4.
- [34]. Akunueze, E. U., Ifeanyi, O. E, Onyemobi, E. C., Johnson, N. and Uzoanya, E. A. U. (2018). Antioxidants in the Management of Human ImmunodeficiencyVirus Infection. *J HIV Retrovirus*, 4(2), 1-12.
- [35]. Ifeanyi, O. E., Obeagu, G. U. and Ijeoma, F. O. and Chioma, U. I. (2015). The values of activated partial thromboplastin time (APTT) among HIV positive patients in FMC Owerri. *Int J Curr Res Aca Rev*, 3, 139-144.
- [36]. Mahaka, H. T. and Chakombera, E. (2008). Knowledge, attitudes and practices on infant feeding options among HIV positive mothers. *Cent Afr J Med*. 54(9-12):51-3.
- [37]. WHO, UNICEF, UNFPA, UNAIDS (2010). Guidelines on HIV and Infant Feeding 2010: Principles and recommendations for infant feeding in the context of HIV and a summary of evidence.
- [38]. Athena, K. P., Denise, J. J., de Vincenzi, I., Taylor, A., Thigpen, M. C., Dao, H., Farley, T. and Fowler, M. G. (2009). Prevention of human immunodeficiency virus-1 transmission to the infant through

- breastfeeding: new developments. *American Journal of Obstetrics & Gynecology*, 197:113-122.
- [39]. Dagnachew, M., Desalegn, W., Gizachew, M. and Tiruneh, M. (2012). Infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Gondar Town health institutions, Northwest Ethiopia. *BMC Public Health*, 12:240 doi: 10.1186/1471-2458-12-240.
- [40]. Fadnes, L. T., Engebretsen, I. M., Wamani, H., Semiyaga, N. B., Tylleskär, T. and Tumwine, J. K. (2009). Infant feeding among HIV-positive mothers and the general population mothers: comparison of two cross-sectional surveys in Eastern Uganda. *BMC Public Health*, 9:124.
- [41]. Mohammed, A., Shehu, A. U., Aliyu, A. A. and Zoaka, A. I. (2010). Infant feeding options, practices and determinants of HIV-positive mothers in Abuja, Nigeria. *Niger Medical Journal*, 51:14-17.
- [42]. Wachira, J., Otieno-Nyunya, B., Ballidawa, J. and Braitstein, P. (2009). Assessment of knowledge, attitudes and practices of infant feeding in the context of HIV: a case study from western Kenya. *SAHARA J.* 6 (3):120-6; quiz 127-33.
- [43]. Rendani, L., Karl, P., Motlatso, G. and Khanyisa, P. (2011). Infant-feeding practices and associated factors of HIV-positive mothers at GertSibande, South Africa. *Acta Pædiatrica*, 100:538-542.
- [44]. Kuhn, L., Aldrovandi, G. M., Sinkala, M., Kankasa, C., Semrau, K., Mwiya, M., Kasonde, P., Scott, N., Vwalika, C., Walter, J., Bulterys, M., Tsai, W. and Thea, D. M. (2011). Effects of Early, Abrupt Weaning on HIV-free Survival of Children in Zambia. *N Engl J Med.*, 359:130-141.
- [45]. Maru, Y. and Haidar, J. (2009). Infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia. *Ethiopian Journal Health Development*, 23:107-114.
- [46]. Nassuna, R. (2023). Occurrence of Malaria in HIV/AIDS Patients at Ishaka Adventist Hospital, Bushenyi District, Uganda. *IDOSR JOURNAL OF SCIENCE AND TECHNOLOGY* 9 (1), 86-97.
- [47]. Katigi, L. (2023). Factors Influencing the Elimination of Mother to Child HIV Transmission Services at Mbarara Regional Referral Hospital, Mbarara District, Uganda. *IDOSR JOURNAL OF BIOLOGY, CHEMISTRY AND PHARMACY* 8 (1), 15-32.
- [48]. Kajura, OM, (2023). Evaluation of the occurrence and factors responsible for Hypertension in HIV Patients on HAART attending Chai Clinic at Kampala International University Teaching Hospital ...*IDOSR JOURNAL OF BIOLOGY, CHEMISTRY AND PHARMACY* 8 (1), 80-91.
- [49]. Atuhaire, R. (2023). Evaluation of the Factors responsible for Increased HIV Infection in Married Couples attending ART Clinic at Ishaka Adventist Hospital, Bushenyi District. *IDOSR JOURNAL OF BIOLOGY, CHEMISTRY AND PHARMACY* 8 (1), 47-63.
- [50]. Ekemu, W. (2023). Evaluation of Occurrence and Factors associated with Tuberculosis amid HIV Positive Adults Attending ART Clinic in Amuria District. *IDOSR JOURNAL OF SCIENCE AND TECHNOLOGY* 9 (1), 40-52.
- [51]. Funda, DM, Albert, NO. (2023). Assessment of the impact of COVID-19 on access of HIV care and Antiretroviral Therapy at selected health facilities in Bushenyi District, Uganda. *INOSR Scientific Research* 9 (1), 1-12.

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