

Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review

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Abstract

Severe malaria and HIV infection are significant causes of morbidity and mortality in children, particularly in resource-limited settings. Blood transfusion is a life-saving intervention commonly utilized in the management of severe anemia secondary to malaria and complications of HIV infection. This review synthesizes existing literature on the cognitive and neurodevelopmental impact of blood transfusion in this vulnerable population. While evidence regarding short-term cognitive impairments associated with blood transfusion exists, such as altered consciousness and confusion, the long-term neurodevelopmental consequences remain poorly understood. Methodological challenges, including limited access to standardized assessment tools and confounding variables, hinder comprehensive research in this area. Healthcare providers must be aware of potential neurocognitive impacts when making clinical decisions, considering factors such as transfusion volume and iron supplementation. Public health interventions focusing on safe blood transfusion practices and neurodevelopmental support services are essential for optimizing outcomes in children with severe malaria and HIV. In conclusion, while blood transfusion is vital for saving lives, further research and targeted interventions are needed to mitigate potential neurocognitive consequences and improve long-term outcomes for this vulnerable population.

Keywords: *Cognitive, Neurodevelopmental, Blood Transfusion, Children, Severe Malaria, HIV, Impact, Pediatrics, Public Health*

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Introduction

Severe malaria and HIV infection pose significant threats to child health globally, particularly in regions with limited access to healthcare resources. Among the critical interventions utilized in managing complications of these diseases, blood transfusion stands out as a life-saving measure, particularly in cases of severe anemia. However, recent research has begun to shed light on potential cognitive and neurodevelopmental implications associated with blood transfusion in children afflicted by severe malaria and HIV. This emerging area of inquiry underscores the importance of understanding the broader impacts of medical interventions beyond their immediate life-saving benefits. Blood transfusion, while crucial for addressing acute complications such as anemia, may introduce additional complexities, especially concerning neurological outcomes in pediatric patients with severe malaria and HIV. While the precise mechanisms underlying these potential neurocognitive effects remain uncertain, several factors, including transfusion volume, iron overload, and transfusion-related infections, have been hypothesized to contribute to adverse outcomes. Given the vulnerability of pediatric populations to both malaria and HIV, elucidating the cognitive and neurodevelopmental implications of blood transfusion is of utmost importance for optimizing patient care and outcomes. Despite the life-saving potential of blood transfusion, concerns regarding its potential impact on cognitive function and neurodevelopmental outcomes have led to a burgeoning interest in this field of study. Understanding the short-term and long-term consequences of blood transfusion in children with severe malaria and HIV is essential for clinicians and policymakers alike. Moreover, addressing methodological challenges and knowledge gaps is crucial for advancing our understanding of the cognitive and neurodevelopmental effects of blood transfusion in this vulnerable population.¹⁻²⁸

This review aims to synthesize existing literature on the cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV. By examining current evidence, methodological challenges, and implications for clinical practice and public health interventions, this review seeks to contribute to a deeper understanding of the broader implications of blood transfusion beyond its immediate life-saving benefits. Ultimately, improving outcomes for children with severe malaria and HIV requires a comprehensive approach that considers the potential neurocognitive consequences of medical interventions such as blood transfusion.

Cognitive and Neurodevelopmental Impact of Blood Transfusion

The cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV is an area of increasing concern and research interest. While blood transfusion is a crucial intervention for managing severe anemia and other complications of these diseases, there is growing recognition that it may have broader implications beyond its immediate life-saving benefits. These impairments may include altered consciousness, confusion, and delirium, which can adversely affect neurological function and recovery. The underlying mechanisms of these

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cognitive effects are not fully understood but may involve factors such as transfusion volume, transfusion-related infections, and iron overload, all of which can impact brain function and development. Long-term neurodevelopmental consequences of blood transfusion in children with severe malaria and HIV remain poorly understood, primarily due to methodological challenges and limited longitudinal studies in this population. While some research has suggested that blood transfusion may have adverse effects on neurodevelopmental outcomes, such as cognitive deficits and developmental delays, further research is needed to confirm and elucidate these associations. Additionally, factors such as disease severity, comorbidities, and socioeconomic status may confound the relationship between blood transfusion and neurodevelopmental outcomes, highlighting the complexity of this issue. Addressing methodological challenges and filling knowledge gaps in the cognitive and neurodevelopmental impact of blood transfusion is crucial for advancing our understanding of this topic. Longitudinal studies with larger sample sizes, standardized assessment tools, and rigorous control for confounding variables are needed to provide robust evidence on the long-term effects of blood transfusion on neurodevelopmental outcomes in children with severe malaria and HIV. Moreover, research focusing on interventions to mitigate potential neurocognitive consequences of blood transfusion, such as iron supplementation and neurodevelopmental support services, is warranted to optimize outcomes in this vulnerable population.²⁹⁻⁶⁰

Methodological Challenges and Gaps in Knowledge

Methodological challenges and gaps in knowledge present significant barriers to understanding the cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV. These challenges stem from the complexity of studying neurological outcomes in a vulnerable population, as well as limitations in research design, access to resources, and ethical considerations. Addressing these challenges is essential for advancing our understanding of this critical issue and improving outcomes for affected children. One of the primary methodological challenges is the lack of standardized assessment tools for evaluating cognitive and neurodevelopmental outcomes in children with severe malaria and HIV. Existing tools may not be culturally appropriate, linguistically validated, or sensitive to the unique challenges faced by this population, limiting the comparability and generalizability of research findings. Developing and validating standardized assessment tools tailored to the needs of children with severe malaria and HIV is crucial for conducting rigorous research in this area. Another challenge is the confounding effects of disease severity and comorbidities on cognitive and neurodevelopmental outcomes. Children with severe malaria and HIV may present with a range of complications, including neurological manifestations, which can confound the relationship between blood transfusion and neurodevelopmental outcomes. Controlling for these confounders in research studies is challenging and requires careful consideration of study design, sample size, and statistical analysis techniques to ensure robust and reliable results.⁶¹⁻⁸⁰

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Access to resources, including funding, trained personnel, and infrastructure, presents additional challenges to conducting research on the cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV, particularly in resource-limited settings. Limited access to standardized assessment tools, research facilities, and longitudinal follow-up may hinder the feasibility and quality of research studies in these settings, limiting our ability to draw meaningful conclusions about neurodevelopmental outcomes. Ethical considerations also pose challenges to conducting research on blood transfusion and neurodevelopmental outcomes in children with severe malaria and HIV. Children in resource-limited settings may lack access to appropriate medical care and may be more vulnerable to potential harms associated with research participation, such as stigma, discrimination, and exploitation. Ensuring informed consent, confidentiality, and protection of participants' rights is essential for conducting ethical research in this population. Addressing methodological challenges and filling knowledge gaps in the cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV requires collaborative efforts among researchers, healthcare providers, policymakers, and community stakeholders. Longitudinal studies with robust study designs, standardized assessment tools, and comprehensive follow-up are needed to provide high-quality evidence on the long-term effects of blood transfusion on neurodevelopmental outcomes. Moreover, investment in research infrastructure, capacity building, and ethical training is essential for conducting ethical and culturally sensitive research in resource-limited settings. By addressing methodological challenges and gaps in knowledge, we can advance our understanding of the cognitive and neurodevelopmental impact of blood transfusion and improve outcomes for children affected by severe malaria and HIV.⁸¹⁻¹⁰⁰

Implications for Clinical Practice and Public Health Interventions

The cognitive and neurodevelopmental implications of blood transfusion in children with severe malaria and HIV have significant implications for clinical practice and public health interventions. Healthcare providers and policymakers must consider these implications to optimize patient care and improve long-term outcomes in this vulnerable population. In clinical practice, healthcare providers should be aware of the potential neurocognitive effects of blood transfusion and consider them when making treatment decisions for children with severe malaria and HIV. This includes careful monitoring of neurological function before and after blood transfusion, particularly in children with pre-existing neurological conditions or comorbidities. Providers should also consider factors such as transfusion volume, iron supplementation, and transfusion-related infections when assessing the risks and benefits of blood transfusion for individual patients. Additionally, healthcare providers should prioritize comprehensive neurodevelopmental assessments for children who have received blood transfusions, particularly those with severe malaria and HIV. These assessments should include standardized tests of cognitive function, language development, motor skills, and social-emotional functioning to identify potential deficits early and facilitate

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appropriate interventions. Early identification and intervention for neurodevelopmental issues can improve outcomes and enhance the quality of life for affected children and their families.¹⁰¹⁻¹²⁷

Public health interventions aimed at improving access to safe blood transfusion practices and implementing iron supplementation protocols are essential for mitigating potential neurocognitive consequences of blood transfusion in children with severe malaria and HIV. Ensuring the safety and quality of blood transfusion services, including screening for transfusion-transmissible infections and monitoring for adverse reactions, is critical for minimizing risks to patients. Moreover, implementing iron supplementation protocols can help prevent iron overload and mitigate potential neurocognitive effects associated with excessive iron levels. Furthermore, public health efforts should focus on providing neurodevelopmental support services for children affected by severe malaria and HIV who require blood transfusion. This includes access to early intervention programs, developmental screenings, and specialized therapies to address neurodevelopmental delays and deficits. Collaboration between healthcare providers, educators, social workers, and community organizations is essential for coordinating care and providing comprehensive support for affected children and their families.¹²⁸⁻

Conclusion

The cognitive and neurodevelopmental impact of blood transfusion in children with severe malaria and HIV presents complex challenges and opportunities for healthcare providers, policymakers, and public health practitioners. While blood transfusion is a critical intervention for managing severe anemia and other complications of these diseases, there is growing recognition that it may have broader implications beyond its immediate life-saving benefits. Public health interventions aimed at improving access to safe blood transfusion practices, implementing iron supplementation protocols, and providing neurodevelopmental support services are essential for mitigating potential neurocognitive consequences of blood transfusion in children with severe malaria and HIV. Collaboration between healthcare providers, policymakers, and community stakeholders is crucial for implementing evidence-based practices and providing comprehensive support for affected children and their families.

References

1. Fowkes FJ, Draper BL, Hellard M, Stoové M. Achieving development goals for HIV, tuberculosis and malaria in sub-Saharan Africa through integrated antenatal care: barriers and challenges. *BMC medicine*. 2016; 14:1-10.
2. Bhutta ZA, Sommerfeld J, Lassi ZS, Salam RA, Das JK. Global burden, distribution, and interventions for infectious diseases of poverty. *Infectious diseases of poverty*. 2014; 3:1-7.
3. Obeagu EI, Obeagu GU, Chukwueze CM, Ikpenwa JN, Ramos GF. EVALUATION OF PROTEIN C, PROTEIN S AND FIBRINOGEN OF PREGNANT WOMEN WITH

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

MALARIA IN OWERRI METROPOLIS. Madonna University journal of Medicine and Health Sciences ISSN: 2814-3035. 2022;2(2):1-9.

4. Obeagu EI, Ibeh NC, Nwobodo HA, Ochei KC, Iwegbulam CP. Haematological indices of malaria patients coinfectd with HIV in Umuahia. Int. J. Curr. Res. Med. Sci. 2017;3(5):100-104.
5. Opeyemi AA, Obeagu EI. Regulations of malaria in children with human immunodeficiency virus infection: A review. Medicine. 2023;102(46): e36166.
6. Obeagu EI, Chijioke UO, Ekelozie IS. Malaria rapid diagnostic test (RDTs). Ann Clin Lab Res. 2018;6(4):275.
7. Obeagu EI, Alum EU, Ugwu OP. Hepcidin: The Gatekeeper of Iron in Malaria Resistance. 2023.
8. Ogomaka IA, Obeagu EI. Methods of Breast Feeding as Determinants of Malaria Infections among Babies in IMO State, Nigeria. International Journal of Medical Science and Dental Research. 2019;2(01):17-24.
9. Obeagu EI, Obeagu GU, Egba SI, Emeka-Obi OR. Combatting Anemia in Pediatric Malaria: Effective Management Strategies. Int. J. Curr. Res. Med. Sci. 2023;9(11):1-7.
10. Hassan AO, Oso OV, Obeagu EI, Adeyemo AT. Malaria Vaccine: Prospects and Challenges. Madonna University journal of Medicine and Health Sciences ISSN: 2814-3035. 2022;2(2):22-40.
11. Obeagu EI, Ogbonna US, Nwachukwu AC, Ochiabuto O, Enweani IB, Ezeoru VC. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. Journal of Pharmaceutical Research International. 2021;33(4):10-9.
12. Obeagu EI, Busari AI, Uduchi IO, Ogomaka IA, Ibekwe AM, Vincent CC, Chijioke UO, Okafor CJ, Okoroiwu HU, Adike CN. Age-Related Haematological Variations in Patients with Asymptomatic Malaria in Akure, Ondo State, Nigeria. Journal of Pharmaceutical Research International. 2021;33(42B):218-24.
13. Ogomaka IA, Obeagu EI. Malaria in Pregnancy Amidst Possession of Insecticide Treated Bed Nets (ITNs) in Orlu LGA of Imo State, Nigeria. Journal of Pharmaceutical Research International. 2021;33(41B):380-386.
14. Obeagu EI, Okwuanaso CB, Edoho SH, Obeagu GU. Under-nutrition among HIV-exposed Uninfected Children: A Review of African Perspective. Madonna University journal of Medicine and Health Sciences. 2022;2(3):120-127.
15. Obeagu EI, Alum EU, Obeagu GU. Factors associated with prevalence of HIV among youths: A review of Africa perspective. Madonna University journal of Medicine and Health Sciences. 2023;3(1):13-18.
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/93>.
16. Obeagu EI. A Review of Challenges and Coping Strategies Faced by HIV/AIDS Discordant Couples. Madonna University journal of Medicine and Health Sciences. 2023 ;3(1):7-12.
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/91>.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

17. Obeagu EI, Obeagu GU. An update on premalignant cervical lesions and cervical cancer screening services among HIV positive women. J Pub Health Nutri. 2023; 6 (2). 2023; 141:1-2. [links/63e538ed64252375639dd0df/An-update-on-premalignant-cervical-lesions-and-cervical-cancer-screening-services-among-HIV-positive-women.pdf](https://doi.org/10.22192/ijcrms.2017.03.01.004).
18. Ezeoru VC, Enweani IB, Ochiabuto O, Nwachukwu AC, Ogbonna US, Obeagu EI. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. Journal of Pharmaceutical Research International. 2021;33(4):10-19.
19. Omo-Emmanuel UK, Chinedum OK, Obeagu EI. Evaluation of laboratory logistics management information system in HIV/AIDS comprehensive health facilities in Bayelsa State, Nigeria. Int J Curr Res Med Sci. 2017;3(1): 21-38.DOI: [10.22192/ijcrms.2017.03.01.004](https://doi.org/10.22192/ijcrms.2017.03.01.004)
20. Obeagu EI, Obeagu GU, Musiimenta E, Bot YS, Hassan AO. Factors contributing to low utilization of HIV counseling and testing services. Int. J. Curr. Res. Med. Sci. 2023;9(2): 1-5.DOI: [10.22192/ijcrms.2023.09.02.001](https://doi.org/10.22192/ijcrms.2023.09.02.001)
21. Obeagu EI, Obeagu GU. An update on survival of people living with HIV in Nigeria. J Pub Health Nutri. 2022; 5 (6). 2022;129. [links/645b4bfcf3512f1cc5885784/An-update-on-survival-of-people-living-with-HIV-in-Nigeria.pdf](https://doi.org/10.22192/ijcrms.2023.09.02.001).
22. Offie DC, Obeagu EI, Akueshi C, Njab JE, Ekanem EE, Dike PN, Oguh DN. Facilitators and barriers to retention in HIV care among HIV infected MSM attending Community Health Center Yaba, Lagos Nigeria. Journal of Pharmaceutical Research International. 2021;33(52B):10-19.
23. Obeagu EI, Ogbonna US, Nwachukwu AC, Ochiabuto O, Enweani IB, Ezeoru VC. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. Journal of Pharmaceutical Research International. 2021;33(4):10-19.
24. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Emeka-Obi OR, Ugwu OP. Hematologic Support in HIV Patients: Blood Transfusion Strategies and Immunological Considerations. Applied Sciences (NIJBAS). 2023;3(3).
25. Obeagu EI, Obeagu GU. Hematological Changes Following Blood Transfusion in Young Children with Severe Malaria and HIV: A Critical Review. Elite Journal of Laboratory Medicine. 2024;2(1):33-45.
26. Obeagu EI, Obeagu GU. Hematological Changes Following Blood Transfusion in Young Children with Severe Malaria and HIV: A Critical Review. Elite Journal of Laboratory Medicine. 2024;2(1):33-45.
27. Obeagu EI, Obeagu GU. The Role of Blood Transfusion Strategies in HIV Management: Current Insights and Future Directions. Elite Journal of Medicine. 2024;2(1):10-22.
28. Obeagu EI, Obeagu GU. Advances in Understanding the Impact of Blood Transfusion on Anemia Resolution in HIV-Positive Children with Severe Malaria: A Comprehensive Review. Elite Journal of Haematology. 2024;2(1):26-41.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

29. Odo M, Ochei KC, Obeagu EI, Barinaadaa A, Eteng UE, Ikpeme M, Bassey JO, Paul AO. TB Infection Control in TB/HIV Settings in Cross River State, Nigeria: Policy Vs Practice. *Journal of Pharmaceutical Research International*. 2020;32(22):101-119.
30. Obeagu EI, Eze VU, Alaebob EA, Ochei KC. Determination of haematocrit level and iron profile study among persons living with HIV in Umuahia, Abia State, Nigeria. *J BioInnovation*. 2016; 5:464-471. [links/592bb4990f7e9b9979a975cf/DETERMINATION-OF-HAEMATOCRIT-LEVEL-AND-IRON-PROFILE-STUDY-AMONG-PERSONS-LIVING-WITH-HIV-IN-UMUAHIA-ABIA-STATE-NIGERIA.pdf](https://www.biorxiv.org/content/10.1101/059255v1).
31. Ifeanyi OE, Obeagu GU. The values of prothrombin time among HIV positive patients in FMC owerri. *International Journal of Current Microbiology and Applied Sciences*. 2015;4(4):911-916.
https://www.academia.edu/download/38320140/Obeagu_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma2.EMMA1.pdf.
32. Izuchukwu IF, Ozims SJ, Agu GC, Obeagu EI, Onu I, Amah H, Nwosu DC, Nwanjo HU, Edward A, Arunsi MO. 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*. 2016;3(10): 55-65.DOI; [10.22192/ijarbs.2016.03.10.009](https://doi.org/10.22192/ijarbs.2016.03.10.009)
33. Chinedu K, Takim AE, Obeagu EI, Chinazor UD, Eloghosa O, Ojong OE, Odunze U. HIV and TB co-infection among patients who used Directly Observed Treatment Short-course centres in Yenagoa, Nigeria. *IOSR J Pharm Biol Sci*. 2017;12(4):70-75.
[links/5988ab6d0f7e9b6c8539f73d/HIV-and-TB-co-infection-among-patients-who-used-Directly-Observed-Treatment-Short-course-centres-in-Yenagoa-Nigeria.pdf](https://www.iosrjournals.org/IOSR-pharm-biol-sci/article/view/5988ab6d0f7e9b6c8539f73d/HIV-and-TB-co-infection-among-patients-who-used-Directly-Observed-Treatment-Short-course-centres-in-Yenagoa-Nigeria.pdf)
34. Oloro OH, Oke TO, Obeagu EI. Evaluation of Coagulation Profile Patients with Pulmonary Tuberculosis and Human Immunodeficiency Virus in Owo, Ondo State, Nigeria. *Madonna University journal of Medicine and Health Sciences*. 2022;2(3):110-119.
35. Nwosu DC, Obeagu EI, Nkwocha BC, Nwanna CA, Nwanjo HU, Amadike JN, Elendu HN, Ofoedeme CN, Ozims SJ, Nwankpa P. 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*. 2016;5(1):24-30.
[links/5ae735e9a6fdcc5b33eb8d6a/CHANGE-IN-LIPID-PEROXIDATION-MARKER-MDAAND-NON-ENZYMATIC-ANTIOXIDANTS-VIT-C-E-IN-HIV-SEROPOSITIVE-CHILDREN-IN-AN-URBAN-COMMUNITY-OF-ABIA-STATE-NIGERIA.pdf](https://www.biorxiv.org/content/10.1101/059255v1).
36. Igwe CM, Obeagu IE, Ogbuabor OA. Clinical characteristics of people living with HIV/AIDS on ART in 2014 at tertiary health institutions in Enugu, Nigeria. *J Pub Health Nutri*. 2022; 5 (6). 2022;130. [links/645a166f5762c95ac3817d32/Clinical-characteristics-of-people-living-with-HIV-AIDS-on-ART-in-2014-at-tertiary-health-institutions-in-Enugu.pdf](https://www.biorxiv.org/content/10.1101/059255v1).
37. Ifeanyi OE, Obeagu GU, Ijeoma FO, Chioma UI. The values of activated partial thromboplastin time (APTT) among HIV positive patients in FMC Owerri. *Int J Curr Res*

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

- Aca Rev. 2015; 3:139-144.
https://www.academia.edu/download/38320159/Obeagu_Emanuel_Ifeanyi3_et_al.IJC_RAR.pdf.
38. Obiomah CF, Obeagu EI, Ochei KC, Swem CA, Amachukwu BO. Hematological indices o HIV seropositive subjects in Nnamdi Azikiwe University teaching hospital (NAUTH), Nnewi. Ann Clin Lab Res. 2018;6(1):1-4.
[links/5aa2bb17a6fdccd544b7526e/Haematological-Indices-of-HIV-Seropositive-Subjects-at-Nnamdi-Azikiwe.pdf](https://www.researchgate.net/publication/328111111_Hematological-Indices-of-HIV-Seropositive-Subjects-at-Nnamdi-Azikiwe.pdf)
 39. Omo-Emmanuel UK, Ochei KC, Osuala EO, Obeagu EI, Onwuasoanya UF. Impact of prevention of mother to child transmission (PMTCT) of HIV on positivity rate in Kafanchan, Nigeria. Int. J. Curr. Res. Med. Sci. 2017;3(2): 28-34.DOI: 10.22192/ijcrms.2017.03.02.005
 40. Aizaz M, Abbas FA, Abbas A, Tabassum S, Obeagu EI. Alarming rise in HIV cases in Pakistan: Challenges and future recommendations at hand. Health Science Reports. 2023;6(8):e1450.
 41. Obeagu EI, Amekpor F, Scott GY. An update of human immunodeficiency virus infection: Bleeding disorders. J Pub Health Nutri. 2023; 6 (1). 2023;139.
[links/645b4a6c2edb8e5f094d9bd9/An-update-of-human-immunodeficiency-virus-infection-Bleeding.pdf](https://www.researchgate.net/publication/368111111_An-update-of-human-immunodeficiency-virus-infection-Bleeding.pdf).
 42. Obeagu EI, Scott GY, Amekpor F, Ofodile AC, Edoho SH, Ahamefula C. Prevention of New Cases of Human Immunodeficiency Virus: Pragmatic Approaches of Saving Life in Developing Countries. Madonna University journal of Medicine and Health Sciences. 2022;2(3):128-134.
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/86>.
 43. Walter O, Anaabo QB, Obeagu EI, Okoroiwu IL. Evaluation of Activated Partial Thromboplastin Time and Prothrombin Time in HIV and TB Patients in Owerri Metropolis. Journal of Pharmaceutical Research International. 2022;29-34.
 44. Obeagu EI, Babar Q, Obeagu GU. Allergic blood Transfusion reaction: A Review. Int. J. Curr. Res. Med. Sci. 2021;7(5):25-33.
 45. Obeagu EI, Ubosi NI, Uzoma G. Maternal Hemorrhage and Blood Transfusions: Safeguarding Pregnancy Health. Int. J. Curr. Res. Chem. Pharm. Sci. 2023;10(11):26-35.
 46. Obeagu EI, Obeagu GU. Transfusion-Related Complications in Children Under 5 with Coexisting HIV and Severe Malaria: A Review. Int. J. Curr. Res. Chem. Pharm. Sci. 2024;11(2):9-19.
 47. ObeaguEI AA, Obeagu GU. Synergistic Effects of Blood Transfusion and HIV in Children Under 5 Years with Severe Malaria: A Review. Elite Journal of HIV. 2024;2(1):31-50.
 48. Obeagu EI, Anyiam AF, Obeagu GU. Managing Anemia in HIV through Blood Transfusions: Clinical Considerations and Innovations. Elite Journal of HIV. 2024;2(1):16-30.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

49. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. *Sciences*. 2024;4(1):32-37.
50. Ogbonna CO, Obeagu EI, Ufelle SA, Ogbonna LN. Evaluation of haematological alterations in children infected by *Plasmodium falciparum* Species in Enugu, Enugu State, Nigeria. *Journal of Pharmaceutical Research International*. 2021;33(1):38-45.
51. Okorie HM, Obeagu EI, Obarezi HC, Anyiam AF. Assessment of some inflammatory cytokines in malaria infected pregnant women in Imo State Nigeria. *International Journal of Medical Science and Dental Research*. 2019;2(1):25-36.
52. Ezeoru VC, Enweani IB, Ochiabuto O, Nwachukwu AC, Ogbonna US, Obeagu EI. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. *Journal of Pharmaceutical Research International*. 2021;33(4):10-19.
53. Okorie HM, Obeagu EI, Eze EN, Jeremiah ZA. Assessment of some haematological parameters in malaria infected pregnant women in Imo state Nigeria. *Int. J. Curr. Res. Biol. Med*. 2018;3(9):1-4.
54. Nwosu DC, Obeagu EI, Ezenwuba C, Agu GC, Amah H, Ozims SJ, Nwanjo HU, Edward A, Izuchukwu IF, Amadike JN, Nwagwu AJ. Antioxidant status of children with *Plasmodium falciparum* malaria in Owerri municipal council of Imo state. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2016;3(8):40-6.
55. Odo M, Ochei KC, Obeagu EI, Barinaadaa A, Eteng EU, Ikpeme M, Bassey JO, Paul AO. Cascade variabilities in TB case finding among people living with HIV and the use of IPT: assessment in three levels of care in cross River State, Nigeria. *Journal of Pharmaceutical Research International*. 2020;32(24):9-18.
56. Jakheng SP, Obeagu EI. Seroprevalence of human immunodeficiency virus based on demographic and risk factors among pregnant women attending clinics in Zaria Metropolis, Nigeria. *J Pub Health Nutri*. 2022; 5 (8). 2022;137. [links/6317a6b1acd814437f0ad268/Seroprevalence-of-human-immunodeficiency-virus-based-on-demographic-and-risk-factors-among-pregnant-women-attending-clinics-in-Zaria-Metropolis-Nigeria.pdf](https://doi.org/10.22192/ijarbs.2023.10.09.015).
57. Obeagu EI, Obeagu GU. A Review of knowledge, attitudes and socio-demographic factors associated with non-adherence to antiretroviral therapy among people living with HIV/AIDS. *Int. J. Adv. Res. Biol. Sci*. 2023;10(9):135-142.DOI: 10.22192/ijarbs.2023.10.09.015 [links/6516faa61e2386049de5e828/A-Review-of-knowledge-attitudes-and-socio-demographic-factors-associated-with-non-adherence-to-antiretroviral-therapy-among-people-living-with-HIV-AIDS.pdf](https://doi.org/10.22192/ijarbs.2023.10.09.015)
58. Obeagu EI, Onuoha EC. Tuberculosis among HIV Patients: A review of Prevalence and Associated Factors. *Int. J. Adv. Res. Biol. Sci*. 2023;10(9):128-134.DOI: 10.22192/ijarbs.2023.10.09.014 [links/6516f938b0df2f20a2f8b0e0/Tuberculosis-among-HIV-Patients-A-review-of-Prevalence-and-Associated-Factors.pdf](https://doi.org/10.22192/ijarbs.2023.10.09.014).
59. Obeagu EI, Ibeh NC, Nwobodo HA, Ochei KC, Iwegbulam CP. Haematological indices of malaria patients coinfecting with HIV in Umuahia. *Int. J. Curr. Res. Med. Sci*.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

- 2017;3(5):100-104.DOI: [10.22192/ijcrms.2017.03.05.014](https://www.academia.edu/download/54317126/Haematological_indices_of_malaria_patients_coinfected_with_HIV.pdf)
[https://www.academia.edu/download/54317126/Haematological indices of malaria patients coinfectd with HIV.pdf](https://www.academia.edu/download/54317126/Haematological_indices_of_malaria_patients_coinfected_with_HIV.pdf)
60. Jakheng SP, Obeagu EI, Abdullahi IO, Jakheng EW, Chukwueze CM, Eze GC, Essien UC, Madekwe CC, Madekwe CC, Vidya S, Kumar S. Distribution Rate of Chlamydial Infection According to Demographic Factors among Pregnant Women Attending Clinics in Zaria Metropolis, Kaduna State, Nigeria. *South Asian Journal of Research in Microbiology*. 2022;13(2):26-31.
 61. Viola N, Kimono E, Nuruh N, Obeagu EI. Factors Hindering Elimination of Mother to Child Transmission of HIV Service Uptake among HIV Positive Women at Comboni Hospital Kyamuhunga Bushenyi District. *Asian Journal of Dental and Health Sciences*. 2023;3(2):7-14. <http://ajdhs.com/index.php/journal/article/view/39>.
 62. Okorie HM, Obeagu Emmanuel I, Okpoli Henry CH, Chukwu Stella N. Comparative study of enzyme linked immunosorbent assay (Elisa) and rapid test screening methods on HIV, Hbsag, Hcv and Syphilis among voluntary donors in. Owerri, Nigeria. *J Clin Commun Med*. 2020;2(3):180-183.DOI: **DOI:** [10.32474/JCCM.2020.02.000137](https://doi.org/10.32474/JCCM.2020.02.000137)
[links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunosorbent-Assay-ElISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf](https://doi.org/10.32474/JCCM.2020.02.000137).
 63. Ezugwu UM, Onyenekwe CC, Ukibe NR, Ahaneku JE, Onah CE, Obeagu EI, Emeje PI, Awalu JC, Igbokwe GE. Use of ATP, GTP, ADP and AMP as an Index of Energy Utilization and Storage in HIV Infected Individuals at NAUTH, Nigeria: A Longitudinal, Prospective, Case-Controlled Study. *Journal of Pharmaceutical Research International*. 2021;33(47A):78-84.
 64. Emmanuel G, Martin O, Peter OS, Obeagu EI, Daniel K. Factors Influencing Early Neonatal Adverse Outcomes among Women with HIV with Post Dated Pregnancies Delivering at Kampala International University Teaching Hospital, Uganda. *Asian Journal of Pregnancy and Childbirth*. 2023 Jul 29;6(1):203-211. <http://research.sdpublishers.net/id/eprint/2819/>.
 65. Igwe MC, Obeagu EI, Ogbuabor AO, Eze GC, Ikpenwa JN, Eze-Stephen PE. Socio-Demographic Variables of People Living with HIV/AIDS Initiated on ART in 2014 at Tertiary Health Institution in Enugu State. *Asian Journal of Research in Infectious Diseases*. 2022;10(4):1-7.
 66. Vincent CC, Obeagu EI, Agu IS, Ukeagu NC, Onyekachi-Chigbu AC. Adherence to Antiretroviral Therapy among HIV/AIDS in Federal Medical Centre, Owerri. *Journal of Pharmaceutical Research International*. 2021;33(57A):360-368.
 67. Igwe MC, Obeagu EI, Ogbuabor AO. ANALYSIS OF THE FACTORS AND PREDICTORS OF ADHERENCE TO HEALTHCARE OF PEOPLE LIVING WITH HIV/AIDS IN TERTIARY HEALTH INSTITUTIONS IN ENUGU STATE. *Madonna*

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

- University journal of Medicine and Health Sciences. 2022;2(3):42-57.
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/75>.
68. Madekwe CC, Madekwe CC, Obeagu EI. Inequality of monitoring in Human Immunodeficiency Virus, Tuberculosis and Malaria: A Review. Madonna University journal of Medicine and Health Sciences. 2022;2(3):6-15.
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/69>
69. Echendu GE, Vincent CC, Ibebuike J, Asodike M, Naze N, Chinedu EP, Ohale B, Obeagu EI. WEIGHTS OF INFANTS BORN TO HIV INFECTED MOTHERS: A PROSPECTIVE COHORT STUDY IN FEDERAL MEDICAL CENTRE, OWERRI, IMO STATE. European Journal of Pharmaceutical and Medical Research, 2023; 10(8): 564-568
70. Nwosu DC, Nwanjo HU, Okolie NJ, Ikeh K, Ajero CM, Dike J, Ojiegbe GC, Oze GO, Obeagu EI, Nnatunanya I, Azuonwu O. BIOCHEMICAL ALTERATIONS IN ADULT HIV PATIENTS ON ANTIRETROVIRAL THERAPY. World Journal of Pharmacy and Pharmaceutical Sciences, 2015; 4(3): 153-160.
[links/5a4fd0500f7e9bbc10526b38/BIOCHEMICAL-ALTERATIONS-IN-ADULT-HIV-PATIENTS-ON-ANTIRETROVIRAL-THERAPY.pdf](https://www.wjps.in/links/5a4fd0500f7e9bbc10526b38/BIOCHEMICAL-ALTERATIONS-IN-ADULT-HIV-PATIENTS-ON-ANTIRETROVIRAL-THERAPY.pdf).
71. Obeagu EI, Obeagu GU. Effect of CD4 Counts on Coagulation Parameters among HIV Positive Patients in Federal Medical Centre, Owerri, Nigeria. Int. J. Curr. Res. Biosci. Plant Biol. 2015;2(4):45-49.
72. Obeagu EI, Nwosu DC. Adverse drug reactions in HIV/AIDS patients on highly active antiretro viral therapy: a review of prevalence. Int. J. Curr. Res. Chem. Pharm. Sci. 2019;6(12):45-8.DOI: 10.22192/ijcrps.2019.06.12.004
[links/650aba1582f01628f0335795/Adverse-drug-reactions-in-HIV-AIDS-patients-on-highly-active-antiretro-viral-therapy-a-review-of-prevalence.pdf](https://www.ijcrps.in/links/650aba1582f01628f0335795/Adverse-drug-reactions-in-HIV-AIDS-patients-on-highly-active-antiretro-viral-therapy-a-review-of-prevalence.pdf).
73. Obeagu EI, Scott GY, Amekpor F, Obeagu GU. Implications of CD4/CD8 ratios in Human Immunodeficiency Virus infections. Int. J. Curr. Res. Med. Sci. 2023;9(2):6-13.DOI: 10.22192/ijcrms.2023.09.02.002 [links/645a4a462edb8e5f094ad37c/Implications-of-CD4-CD8-ratios-in-Human-Immunodeficiency-Virus-infections.pdf](https://www.ijcrms.in/links/645a4a462edb8e5f094ad37c/Implications-of-CD4-CD8-ratios-in-Human-Immunodeficiency-Virus-infections.pdf).
74. Obeagu EI, Ochei KC, Okeke EI, Anode AC. Assessment of the level of haemoglobin and erythropoietin in persons living with HIV in Umuahia. Int. J. Curr. Res. Med. Sci. 2016;2(4):29-33. [links/5711c47508aeebe07c02496b/Assessment-of-the-level-of-haemoglobin-and-erythropoietin-in-persons-living-with-HIV-in-Umuahia.pdf](https://www.ijcrms.in/links/5711c47508aeebe07c02496b/Assessment-of-the-level-of-haemoglobin-and-erythropoietin-in-persons-living-with-HIV-in-Umuahia.pdf).
75. Ifeanyi OE, Obeagu GU. The Values of CD4 Count, among HIV Positive Patients in FMC Owerri. Int. J. Curr. Microbiol. App. Sci. 2015;4(4):906-910.
https://www.academia.edu/download/38320134/Obeagu_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma.EMMA2.pdf.
76. Obeagu EI, Okeke EI, Anonde Andrew C. Evaluation of haemoglobin and iron profile study among persons living with HIV in Umuahia, Abia state, Nigeria. Int. J. Curr. Res. Biol. Med. 2016;1(2):1-5.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

77. Alum EU, Ugwu OP, Obeagu EI, Okon MB. Curtailing HIV/AIDS Spread: Impact of Religious Leaders. Newport International Journal of Research in Medical Sciences (NIJRMS). 2023;3(2):28-31.
78. Obeagu EI, Obeagu GU, Paul-Chima UO. Stigma Associated With HIV. AIDS: A Review. Newport International Journal of Public Health and Pharmacy (NIJPP). 2023;3(2):64-67.
79. Alum EU, Obeagu EI, Ugwu OP, Aja PM, Okon MB. HIV Infection and Cardiovascular diseases: The obnoxious Duos. Newport International Journal of Research in Medical Sciences (NIJRMS). 2023;3(2):95-99.
80. Ibebuike JE, Nwokike GI, Nwosu DC, Obeagu EI. A Retrospective Study on Human Immune Deficiency Virus among Pregnant Women Attending Antenatal Clinic in Imo State University Teaching Hospital. *International Journal of Medical Science and Dental Research*, 2018; 1 (2):08-14.
<https://www.ijmsdr.org/published%20paper/li1i2/A%20Retrospective%20Study%20on%20Human%20Immune%20Deficiency%20Virus%20among%20Pregnant%20Women%20Attending%20Antenatal%20Clinic%20in%20Imo%20State%20University%20Teaching%20Hospital.pdf>.
81. Obeagu EI, Obarezi TN, Omeh YN, Okoro NK, Eze OB. Assessment of some haematological and biochemical parametrs in HIV patients before receiving treatment in Aba, Abia State, Nigeria. Res J Pharma Biol Chem Sci. 2014; 5:825-830.
82. Obeagu EI, Obarezi TN, Ogbuabor BN, Anaebo QB, Eze GC. Pattern of total white blood cell and differential count values in HIV positive patients receiving treatment in Federal Teaching Hospital Abakaliki, Ebonyi State, Nigeria. International Journal of Life Science, Biotechnology and Pharama Research. 2014; 391:186-189.
83. Obeagu EI. A Review of Challenges and Coping Strategies Faced by HIV/AIDS Discordant Couples. Madonna University journal of Medicine and Health Sciences. 2023; 3 (1): 7-12.
84. Oloro OH, Obeagu EI. A Systematic Review on Some Coagulation Profile in HIV Infection. International Journal of Innovative and Applied Research. 2022;10(5):1-11.
85. Nwosu DC, Obeagu EI, Nkwuocha BC, Nwanna CA, Nwanjo HU, Amadike JN, Ezemma MC, Okpomeshine EA, Ozims SJ, Agu GC. Alterations in superoxide dismutiase, vitamins C and E in HIV infected children in Umuahia, Abia state. International Journal of Advanced Research in Biological Sciences. 2015;2(11):268-271.
86. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sickel Cell Anaemia. Newport International Journal of Scientific and Experimental Sciences (NIJSES). 2023;3(2):56-59.
87. Ifeanyi OE, Uzoma OG, Stella EI, Chinedum OK, Abum SC. Vitamin D and insulin resistance in HIV sero positive individuals in Umudike. Int. J. Curr. Res. Med. Sci. 2018;4(2):104-108.
88. Ifeanyi OE, Leticia OI, Nwosu D, Chinedum OK. A Review on blood borne viral infections: universal precautions. Int. J. Adv. Res. Biol. Sci. 2018;5(6):60-66.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

89. Nwovu AI, Ifeanyi OE, Uzoma OG, Nwebonyi NS. Occurrence of Some Blood Borne Viral Infection and Adherence to Universal Precautions among Laboratory Staff in Federal Teaching Hospital Abakaliki Ebonyi State. *Arch Blood Transfus Disord.* 2018;1(2).
90. Chinedu K, Takim AE, Obeagu EI, Chinazor UD, Eloghosa O, Ojong OE, Odunze U. HIV and TB co-infection among patients who used Directly Observed Treatment Short-course centres in Yenagoa, Nigeria. *IOSR J Pharm Biol Sci.* 2017;12(4):70-75.
91. Offie DC, Obeagu EI, Akueshi C, Njab JE, Ekanem EE, Dike PN, Oguh DN. Facilitators and barriers to retention in HIV care among HIV infected MSM attending Community Health Center Yaba, Lagos Nigeria. *Journal of Pharmaceutical Research International.* 2021;33(52B):10-19.
92. Obeagu EI, Obeagu GU, Ede MO, Odo EO, Buhari HA. Translation of HIV/AIDS knowledge into behavior change among secondary school adolescents in Uganda: A review. *Medicine (Baltimore).* 2023;102(49): e36599. doi: 10.1097/MD.00000000000036599. PMID: 38065920; PMCID: PMC10713174.
93. Anyiam AF, Arinze-Anyiam OC, Ironi EA, Obeagu EI. Distribution of ABO and rhesus blood grouping with HIV infection among blood donors in Ekiti State Nigeria. *Medicine (Baltimore).* 2023;102(47): e36342. doi: 10.1097/MD.00000000000036342. PMID: 38013335; PMCID: PMC10681551.
94. Echefu SN, Udosen JE, Akwiwu EC, Akpotuzor JO, Obeagu EI. Effect of Dolutegravir regimen against other regimens on some hematological parameters, CD4 count and viral load of people living with HIV infection in South Eastern Nigeria. *Medicine (Baltimore).* 2023;102(47): e35910. doi: 10.1097/MD.00000000000035910. PMID: 38013350; PMCID: PMC10681510.
95. Opeyemi AA, Obeagu EI. Regulations of malaria in children with human immunodeficiency virus infection: A review. *Medicine (Baltimore).* 2023;102(46): e36166. doi: 10.1097/MD.00000000000036166. PMID: 37986340; PMCID: PMC10659731.
96. Alum EU, Obeagu EI, Ugwu OPC, Samson AO, Adepoju AO, Amusa MO. Inclusion of nutritional counseling and mental health services in HIV/AIDS management: A paradigm shift. *Medicine (Baltimore).* 2023;102(41): e35673. doi: 10.1097/MD.00000000000035673. PMID: 37832059; PMCID: PMC10578718.
97. Aizaz M, Abbas FA, Abbas A, Tabassum S, Obeagu EI. Alarming rise in HIV cases in Pakistan: Challenges and future recommendations at hand. *Health Sci Rep.* 2023;6(8): e1450. doi: 10.1002/hsr2.1450. PMID: 37520460; PMCID: PMC10375546.
98. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Emeka-Obi OR, Ugwu OP. Hematologic Support in HIV Patients: Blood Transfusion Strategies and Immunological Considerations. *APPLIED SCIENCES (NIJBAS).* 2023;3(3).
99. Obeagu EI, Ubosi NI, Uzoma G. Storms and Struggles: Managing HIV Amid Natural Disasters. *Int. J. Curr. Res. Chem. Pharm. Sci.* 2023;10(11):14-25.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

100. Obeagu EI, Obeagu GU. Human Immunodeficiency Virus and tuberculosis infection: A review of prevalence of associated factors. *Int. J. Adv. Multidiscip. Res.* 2023;10(10):56-62.
101. Obeagu EI, Obeagu GU. Advances in Understanding the Impact of Blood Transfusion on Anemia Resolution in HIV-Positive Children with Severe Malaria: A Comprehensive Review. *Elite Journal of Haematology.* 2024;2(1):26-41.
102. Bangirana P, Opoka RO, Boivin MJ, Idro R, Hodges JS, Romero RA, Shapiro E, John CC. Severe malarial anemia is associated with long-term neurocognitive impairment. *Clinical Infectious Diseases.* 2014;59(3):336-344.
103. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sickle Cell Anaemia. *Newport International Journal of Scientific and Experimental Sciences (NIJSES).* 2023;3(2):56-9.
104. Alum EU, Ugwu OP, Obeagu EI, Aja PM, Okon MB, Uti DE. Reducing HIV Infection Rate in Women: A Catalyst to reducing HIV Infection pervasiveness in Africa. *International Journal of Innovative and Applied Research.* 2023;11(10):01-6.
105. Obeagu EI, Obeagu GU. Unmasking the Truth: Addressing Stigma in the Fight Against HIV. *Elite Journal of Public Health.* 2024;2(1):8-22.
106. Obeagu EI, Obeagu GU, Okwuanaso CB. Optimizing Immune Health in HIV Patients through Nutrition: A Review. *Elite Journal of Immunology.* 2024;2(1):14-33.
107. Obeagu EI, Obeagu GU. Utilization of immunological ratios in HIV: Implications for monitoring and therapeutic strategies. *Medicine.* 2024;103(9):e37354.
108. Obeagu EI, Obeagu GU. CD8 Dynamics in HIV Infection: A Synoptic Review. *Elite Journal of Immunology.* 2024;2(1):1-3.
109. Obeagu EI, Obeagu GU. Implications of B Lymphocyte Dysfunction in HIV/AIDS. *Elite Journal of Immunology.* 2024;2(1):34-46.
110. Obeagu EI, Obeagu GU. Maternal Influence on Infant Immunological Responses to HIV: A Review. *Elite Journal of Laboratory Medicine.* 2024;2(1):46-58.
111. Obeagu EI, Obeagu GU. Understanding B Lymphocyte Functions in HIV Infection: Implications for Immune Dysfunction and Therapeutic Strategies. *Elite Journal of Medicine.* 2024;2(1):35-46.
112. Obeagu EI, Obeagu GU. Platelet-Driven Modulation of HIV: Unraveling Interactions and Implications. *Journal home page: <http://www.journalijar.com>;*12(01).
113. Obeagu EI, Anyiam AF, Obeagu GU. Managing Hematological Complications in HIV: Erythropoietin Considerations. *Elite Journal of HIV.* 2024;2(1):65-78.
114. Obeagu EI, Obeagu GU, Hauwa BA, Umar AI. Hematocrit Variations in HIV Patients Co-infected with Malaria: A Comprehensive Review. *Journal home page: <http://www.journalijar.com>;*12(01).
115. ObeaguEI AA, Obeagu GU. Synergistic Effects of Blood Transfusion and HIV in Children Under 5 Years with Severe Malaria: A Review. *Elite Journal of HIV.* 2024;2(1):31-50.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

116. Obeagu EI, Anyiam AF, Obeagu GU. Unveiling B Cell Mediated Immunity in HIV Infection: Insights, Challenges, and Potential Therapeutic Avenues. *Elite Journal of HIV*. 2024;2(1):1-5.
117. Obeagu EI, Obeagu GU. Hematocrit Fluctuations in HIV Patients Co-infected with Malaria Parasites: A Comprehensive Review. *Int. J. Curr. Res. Med. Sci.* 2024;10(1):25-36.
118. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Ugwu OP. Immunomodulatory Effects of Transfusions on Maternal Immunity in Pregnancy. *Applied Sciences (NIJBAS)*. 2023;3(3).
119. Obeagu EI, Babar Q, Uduchi IO, Ibekwe AM, Chijioke UO, Okafor CJ, Vincent CC. An Update on Transfusion Related Immunomodulation (TRIM) in a Time of COVID-19 Pandemic. *Journal of Pharmaceutical Research International*. 2021 Aug 27;33(42A):135-146.
120. Okoroiwu IL, Obeagu EI, Elemchukwu Q, Ochei KC, Christian GS. Frequency of Transfusion Reactions Following Compatible Cross Matching of Blood: A Study in Owerri Metropolis. *International Journal of Current Research and Academic Review*. 2015;3(1):155-160.
121. Obeagu EI, Oshim IO, Ochei KC, Obeagu GU. Iron and blood donation: A Review. *Int. J. Curr. Res. Med. Sci.* 2016;2(10):16-48.
122. Ogar CO, Okoroiwu HU, Obeagu EI, Etura JE, Abunimye DA. Assessment of blood supply and usage pre-and during COVID-19 pandemic: a lesson from non-voluntary donation. *Transfusion Clinique et Biologique*. 2021;28(1):68-72.
123. Okamgba OC, Nwosu DC, Nwobodo EI, Agu GC, Ozims SJ, Obeagu EI, Ibanga IE, Obioma-Elemba IE, Ihekaire DE, Obasi CC, Amah HC. Iron Status of Pregnant and Post-Partum Women with Malaria Parasitaemia in Aba Abia State, Nigeria. *Annals of Clinical and Laboratory Research*. 2017;5(4):206.
124. Anyiam AF, Arinze-Anyiam OC, Omosigho PO, Ibrahim M, Irondi EA, Obeagu EI, Obi E. Blood Group, Genotype, Malaria, Blood Pressure and Blood Glucose Screening Among Selected Adults of a Community in Kwara State: Implications to Public Health. *Asian Hematology Research Journal*. 2022;6(3):9-17.
125. Obeagu EI, Nimo OM, Bunu UO, Ugwu OP, Alum EU. Anaemia in children under five years: African perspectives. *Int. J. Curr. Res. Biol. Med.* 2023; 1:1-7.
126. Madekwe CC, Madekwe CC, Obeagu EI. Inequality of monitoring in Human Immunodeficiency Virus, Tuberculosis and Malaria: A Review. *Madonna University journal of Medicine and Health Sciences*. 2022;2(3):6-15.
127. Offie DC, Ibekwe AM, Agu CC, Esimai BN, Okpala PU, Obeagu EI, Ufelle SA, Ogbonna LN. Fibrinogen and C-Reactive Protein Significance in Children Infected by *Plasmodium falciparum* Species in Enugu, Enugu State, Nigeria. *Journal of Pharmaceutical Research International*. 2021;33(15):1-8.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

128. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. *Sciences*. 2024;4(1):32-7.
129. Obeagu EI, Obeagu GU. Mental Health and Psychosocial Effects of natural disaster on HIV Patients. *Sciences*. 2024;4(1):38-44.
130. Obeagu EI, Obeagu GU. Eosinophil-Associated Changes in Neonatal Thymic T Regulatory Cell Populations in HIV-Infected Pregnancies. *Elite Journal of Health Science*. 2024;2(1):33-42.
131. Obeagu EI, Obeagu GU. Advances in Understanding the Impact of Blood Transfusion on Anemia Resolution in HIV-Positive Children with Severe Malaria: A Comprehensive Review. *Elite Journal of Haematology*. 2024;2(1):26-41.
132. Obeagu EI, Ayogu EE, Obeagu GU. Interactions between Blood Transfusion and Antiretroviral Medications: Implications for Patient Care. *Elite Journal of Medicine*. 2024;2(2):104-15.
133. Obeagu EI, Obeagu GU. Maternal Eosinophilic Responses in HIV-Positive Pregnant Women: Unraveling Immunological Dynamics for Improved Maternal-Fetal Health. *Elite Journal of Immunology*. 2024;2(1):47-64.
134. Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. *Elite Journal of HIV*. 2024;2(2):1-7.
135. Obeagu EI, Ubosi NI, Obeagu GU, Akram M. Early Infant Diagnosis: Key to Breaking the Chain of HIV Transmission. *Elite Journal of Public Health*. 2024;2(1):52-61.
136. Obeagu EI, Obeagu GU. Understanding Hematocrit Fluctuations in HIV-Malaria Coinfection for Improved Management. *Elite Journal of Public Health*. 2024;2(1):22-34.
137. Obeagu EI, Obeagu GU. The Impact of Erythropoietin on Preeclampsia in HIV-Positive Women: A Review. *Elite Journal of Nursing and Health Science*. 2024;2(1):21-31.
138. Obeagu EI, Obeagu GU. Platelet Distribution Width (PDW) as a Prognostic Marker for Anemia Severity in HIV Patients: A Comprehensive Review. *Journal home page*: [http://www.journalijar.com](http://www.journalijar.com;);12(01).
139. Anyiam AF, Arinze-Anyiam OC, Ironi EA, Obeagu EI. Distribution of ABO and rhesus blood grouping with HIV infection among blood donors in Ekiti State Nigeria. *Medicine*. 2023;102(47): e36342.
140. Obeagu EI. Blood Transfusion: A Powerful Process of Saving Anaemic Patients. *EC Emergency Medicine and Critical Care*. 2020;4(7):33-40.
141. Obeagu EI, Buhari HA. Implications of Blood Transfusion in Renal Disease Patients. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2023;10(10):45-49.
142. Anyiam AF, Arinze-Anyiam OC, Omosigho PO, Ibrahim M, Ironi EA, Obeagu EI, Obi E. Blood Group, Genotype, Malaria, Blood Pressure and Blood Glucose Screening Among Selected Adults of a Community in Kwara State: Implications to Public Health. *Asian Hematology Research Journal*. 2022;6(3):9-17.

Citation: Obeagu EI, Elamin EAI Obeagu GU. Cognitive and Neurodevelopmental Impact of Blood Transfusion in Children with Severe Malaria and HIV: A Review. *Elite Journal of Haematology*, 2024; 2(3): 118-135

143. Obeagu EI, Obeagu GU, Ukibe NR, Oyejadejo SA. Anemia, iron, and HIV: decoding the interconnected pathways: A review. *Medicine*. 2024;103(2): e36937.
144. Obeagu EI. An update on susceptibility of individuals to diseases based on ABO blood groups. *Int. J. Curr. Res. Med. Sci*. 2019;5(3):1-8.
145. Eze R, Obeagu EI, Nwakulite A, Vincent CC, Ogbodo SO, Ibekwe AM, Okafor CJ, Chukwurah EF. Frequency of Haemoglobin Genotype Variants, ABO and Rh 'D' Antigen among Madonna Undergraduates of South East Origin, Nigeria. *Journal of Pharmaceutical Research International*. 2021 May 26;33(29B):149-57.
146. Okoroiwu IL, Obeagu EI, Christian SG, Elemchukwu Q, Ochei KC. Determination of the haemoglobin, genotype and ABO blood group pattern of some students of Imo State University, Owerri, Nigeria. *International Journal of Current Research and Academic Review*. 2015;3(1):20-27.
147. Oloro OH, Obeagu EI, Puche RO, Lawal OA. Blood Products in Blood Banking: Preparation and Clinical Importance. *Madonna University journal of Medicine and Health Sciences* ISSN: 2814-3035. 2022;2(3):102-109.
148. Asemota EA, Njar VE, Aguanah IT, Obeagu EI. Distribution of ABO, Rhesus Blood Group and Helicobacter Pylori Infection among Secondary School Students in Calabar South Local Government, Cross River State, Nigeria. *Madonna University journal of Medicine and Health Sciences* ISSN: 2814-3035. 2023;3(1):32-45.
149. Obeagu EI, Katya MC. A Systematic Review on Physiological Jaundice: Diagnosis and Management of the Affected Neonates. *Madonna University journal of Medicine and Health Sciences*. 2022;2(3):25-41.
150. Okorie HM, Obeagu EI, Eze EN, Jeremiah ZA. Assessment of coagulation parameters in malaria infected pregnant women in Imo state, Nigeria. *International Journal of Current Research in Medical Sciences*. 2018;4(9):41-9.
151. Ogbonna LN, Ezeoru VC, Ofodile AC, Ochiabuto OM, Obi-Ezeani CN, Okpala PU, Okafor CJ, Obeagu GU, Busari AI, Obeagu EI. Gender Based Variations of Haematological Parameters of Patients with Asymptomatic Malaria in Akure, Ondo State, Nigeria. *Journal of Pharmaceutical Research International*. 2021;33(8):75-80.
152. Eberendu IF, Ozims SJ, Agu GC, Amah HC, Obasi CC, Obioma-Elemba JE, Ihakaire DE, Ibanga IE, Amah CC, Obeagu EI, Nwosu DC. Impact of human activities on the breeding of mosquitoes of human disease in Owerri metropolis, Imo state. *Int J Adv Res Biol Sci IJARBS*. 2017;4(12):98-106.
153. Obeagu EI, Ofodile AC, Okwuanaso CB. A review on socio economic and behavioral aspects of malaria and its control among children under 5 years of age in Africa. *J Pub Health Nutri*. 2023; 6 (1): 136.

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