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Creating Nation with Intelligent People: Prenatal-Postnatal Foods and Practices nurturing intelligence

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Abstract

The purpose of this paper is to awaken individuals responsible for developing child policies, Acts, maternal policies, or food and nutrition policy guidelines to include a list of foods available in their localities with potential for the unborn and children brain development. Indeed, adults are not exclusive, but emphasis is on the unborn and children. Including foods for improving intelligence, it means that society will ensure expectant mothers take recommended foods to promote intelligence of a newborn. The purpose is to enable food and nutrition related policy developers and implementers (society) to translate easily the policies through adopting to taking the recommended foods. The policy developers and implementers are such as health servants, teachers, parents or guardians. Policy developers and implementers need to know foods that expectant mothers are required to take regularly for fetal brain development before and after the mother delivers. Indeed, the same foods need to be taken by a newborn or child. On this basis, the paper provides a list of foods useful for the development of the brain in prenatal and postnatal periods. In addition, the paper indicates that the development of the brain of the fetus and a newborn depends on nurturing environment created during and after pregnancy. The environment includes intentional actions (practices) and provided foods to develop the fetus and the child's brain. Furthermore, the paper shows the research knowledge gap relating to information available on prevalence of awareness or knowledge on foods for fetus and child brain development in different population segments and localities. The purpose is to know the segment or locality with the least awareness in order to intervene through creating it by introducing special awareness creation programmes. Moreover, the paper recommends future researchers to navigates on knowledge (awareness) and application of the best practices to improve intelligence of the unborn and a newborn. The paper ends with providing policy implications based on research agenda and improving national policies on food and nutrition to enhance fetal and child brain development; thus, improving intelligence of a children in a nation.

Keywords: Awareness, Foods, Prenatal-Postnatal practice, Intelligence, Nurturing environment

1 Introduction

Intelligent people are those who can advance knowledge in different fields through creativity. Every field has people who are uniquely intelligent in the same (field). Indeed, different fields have contribution to making life livable, and the fields have people with unique intelligence in respectiveterritories. The presence of intelligent people opens doors to the development of respective fields. Intelligent people can make breakthroughs in the respective fields, namely education, politics,

economy, sociology, culture, mathematics, music, fine and performing arts, the list goes on. While intelligence is from genetics, there are some other environment related factors contributing to strengthening it. Understanding what contributes to making people highly intelligent, it is important to create society with prowess and creativity. In the same way, it improves in-puts in the education systems in the world among other pertinent outcomes from making intelligent children. Making intelligent children through practices before and after they are born, it is particularly important because intellectuals are born rather than made. We speculate that this is true because if you take a mentally retarded child to a school with highly qualified academic staff and rich in teaching-learning facilities. The mentally retarded child is likely to remain more or less the same in terms of mental capabilities. This is why this paper is important to concentrate at making children intelligent deliberately before and after birth. The paper does not cover on issues relating to spouse selection to make an intelligent child because it sounds tendentious.

Needless to say, education systems performance by-and-large lies on the quality of students entering a particular education cycle. Education systems may have quality teachers, but if the quality of students is poor the teacher's efforts vanish into a thin air. This view is corroborated by the resource-input model of quality assurance in education (1997). The quality of in-puts (students and other human resources) determines a school academic success. This is the reason for entry requirements or standards in education systems. As it is, effective education systems depend on the quality of students joining different levels of education. Understanding the importance of quality students joining education systems, it is important to ensure that an unborn and a newborn are nurtured such that their brains grow strong through deliberate efforts to improve brain development and functioning. Creating a nation with intelligent people, it should be a number one priority in any nation. Intelligent people are a source of products we see everywhere in the universe. A nation with less intelligent people remains poor despite abundant natural wealth such as minerals and resources from loans, taxes, and development well wishers grants.

Besides, as a nation, we need intelligent people for breakthroughs to simplify the life of the people allover the world. Despite this potential importance of developing the brain of a child before and after birth, the Child Development policy Tanzania (2008), The Tanzania Food and Nutrition Policy (1992), The Tanzania food and Nutrition guidelines (2023), The Tanzania Law of Child Act (2019) Chapter 13 hardly provide details on type food a child and an expectant mother have to take on regular basis for the development of the brain of a fetus and/or child. From this oversight in the government documents, this paper intents to list foods an expectant mother and an infant or child should take on regular basis to effectively develop their brain. This implies that these important documents to help the people of Tanzania on child dieting do not say enough to help citizens translate the policies, guidelines and Acts into practice smoothly. Another lingering problems relating to government documents in Tanzania, it is that the documents are at times not interpreted into practice. An obvious example is the Food and Nutrition policy (1992) its guidelines were developed in 2023. From this situation, one may asked how was the policy being implemented without guidelines? The same applies to the child Act (2009) before its repeal in 2019 chapter 13 there were some issues which were not enacted at all until the law was repealed. This is to say sometimes as a nation we may have good plans, but we do not translate the plans into actions or we implement the plans contrary to what is stipulated in an Act or policy document. In this respect, Tanzania is just used a case in this paragraph only to explain about the existing situation

with regards to child brain development efforts by the state; consequently, by individuals or responsible entities.

As it stands, intelligent people can make people live a happy life through solving real life problems (Sternberg, 2019). Indeed, as has been shown earlier, real life problems to be solved prevail in different specific fields. Whenever we have highly intelligent people in different fields, we attract creativity, innovations, inventions and scientific breakthroughs in the fields in which highly creative people belong. In so doing, we attract development in life spheres. The sustainability of development in different fields of life lies on the mental powers woven in highly intelligent people (Johnson, 2021). To add, the number of highly intelligent people influences development in nation security services (Hunt, 2011). To say it differently, the larger the number of intelligent people the higher the level of development in various spheres of life. In a nation where there is high number of intelligent people, there is agility and adaptability during crisis, pandemics for instance using sophisticated technologies to hold adverse situations in control (Brown& Lee, 2022). Education systems at times emphasis on quality of entrants (students) at a particular education cycle. The emphasis on entry criteria aims at achieving the education outcomes successfully. Therefore, nurturing the unborn with particular focus on the brain development provides a room for education systems enrolling intelligent entrants at different levels of education.

As it is, highly intelligent people who are important for overall well-beingof any nation in all aspects of life. It is from this importance we intend to critically review documents on practices before birth and after birth which promote intelligence. This paper strives to unearth deliberate efforts by parents and/or guardians emanating from full conscience on the outcomes of their same (efforts), which can be used to establish society best practices to make an individual highly intelligent through practices before birth and after birth. This understanding revealed from different parts of the world provides the need to nurture and promote intelligence through deliberate efforts from parents or guardians, teachers, the government and the children themselves. The paper acts as a useful source of best practices to the key stakeholders. It gives light to what the stakeholders should do based on contexts to promote the unborn brain development and ultimately the functioning of it. In this way, intelligence of the unborn and a child improves. It has to be further noted that the paper does not delve into the chemistry on what happens exactly to the brain of an unborn and of an infant or a child, but expose to families, teachers, students, and governments on what science informs, and recommend as best practices based on science to enhance intelligence of an unborn and a newborn. Other issues regarding details on ingredients of food, and how those ingredients work in a human body are not within the scope of this paper. Moreover, matters relating to inheritance of intelligence from parents are not within the scope of this paper. The paper shows how to promote intelligence through nurturing environment before and after birth. Moreover, it shows foods that improve and protect brain for one to be intelligent. In this regard, this paper sought to answer three interrelate questions: what prenatal foods and best practices enhance intelligence? What post-natal foods and best practices enhance intelligence? What is the prevalence on the awareness of people about foods and the the best practices in prenatal and postnatal for enhancing intelligence of children?

2 Methods

The first step was to search for literature on developing intelligence in prenatal and post-natal periods. The literature was reviewed. The review process included literature with contents on how to promote

intelligence in prenatal and postnatal. In addition, review of literature on prevalence of population awareness and application of knowledge on foods and practices to enhance intelligence in prenatal and postnatal periods was conducted. The literature was reviewed to establish ways can be used to improve the development of intelligence of an unborn and the newborn. During review process, short notes were prepared for reference during writing on the nurturing of the brain. Having collected data from a wide range of articles on the said themes, patterns from notes during review were established. As such, findings from the review process were established and reported under each theme. The scope in terms of time articles were published; it was articles which were not more than five years old, but a few of them, such as policy documents.

3 Findings

3.1 Prenatal foods and practices for enhancing intelligence

Expectant mothers at their best need to take foods rich in omega 3 oil, iron and folic acid as one of ways of taking care of the unborn. Foods comprising these ingredients promote the functioning and the development of the brain (Smith, Jones & Carter, 2021). According to (Kuzemchak, 2022) foods such as salmon, Sardines, foods rich in vitamin B12, trouts and foods rich in Zinc to promote the development of the brain of a fetus. Further, expectant mothers are encouraged to take vitamins such as folate supplements to ensure quality neurons develop; thus, effective brain development (Johnson & Miller, 2022). To add, foods rich in anti-oxidants such as pawpaw, blue berries, tomatoes and leafy greens are essential in developing the unborn brain tissues (Admin-Science, 2024). Indeed, lean meat, yogurt and eggs are also rich sources of protein, which is important for brain development of a fetus (Happypreggie, 2021). The information from this paper is succinct to enable readers develop a habit of taking food useful for brain development.

In addition, scholars (Brown & Lee, 2020) establish that practices such as harmonious relationship during pregnancy among family members, providing an opportunity to the unborn listening to music and expectant parents reading aloud culminates in timely (early) cognitive stimulation (Anderson & White, 2020). As it is, there are a number of practices enhancing child's intelligence. These are: emphasis on taking care of a fetus and creation of simulating environment (Elansary & Mccoy, 2022). Indeed, this is how brain stimulating (nurturing) environment to the unborn is created. Experience from Tanzania, an expectant mother experiences less harmonious relationship with her spouse or other members of the family. As it stands, it seems there is little or no knowledge on the role of friendly environment to the unborn. Indeed, reading culture among men and women is a distant phenomenon in some societies, Tanzania is inclusive. Again, a few mothers and fathers might have this useful information and use the same. In relation to listening to music, in some societies, this can happen incidentally, for instance, in Tanzania by-and-large people value music. This is not the case with minority ethnic groups residing in remote areas, the Hadzabe, for example. Listening to music is a ubiquitous practice in most towns and cities. This practice of listening to music happens at home, on buses, cars, churches or festivals to mention but a few. In Tanzania, the unborn has a greater chance to listen to music because of music culture deeply rooted in most parts of the country. This implies that certain practices may render positive impact to intelligence incidentally. In the same vein, one may take certain foods with positive impact to intelligence unknowingly. It is important to find ways to make all people informed on how to make intelligent children; consequently, creating an intelligent nation.

Besides, expectant mothers are encouraged to manage stress since it releases hormones that may affect the development of the brain of the unborn (Williams, Patel & Rodriguez, 2021). In the same way, Taylor and Green (2022) emphasis on light exercises of an expectant mother, which enhance the functioning of the brain and the development of intelligence of the unborn.

3.2 Postnatal foods and practices for enhancing intelligence

In the previous section, we have covered on prenatal foods and practices enhancing intelligence. In this section, we devote our reflections on postnatal foods and practices improving child's brain development; consequently, improving an individual's intelligence in their lifetime.

Concerning the edibles enhancing intelligence to newborns and/or children, this includes some forms of vegetables, seeds, fruits and fish are good for a child's brain development. In relation to green vegetables, these include kale, spinach, broccoli, and collards. These vegetables have vitamins and other nutrients essential for preventing brain deterioration. With regards to seeds, some forms of seeds are good for brain development. These include walnuts, pecans, flax-seeds, chiaseeds, mustard, and soybeans. These are rich in omega 3 oil. Omega 3 oil reduces chances for Alzheimer's disease. As for fruits, some forms of fruits are good for the brain. These fruits are strawberries, blue berries, and bananas. Finally, some forms of fish, namely mackerel, salmon, cod liver oil, herring, sardines, anchovies, and caviar (Havard Health Publishing, 2024; Smith, 2024).

Apart from providing foods rich in vitamins and minerals important for brain development and nurturing, quality early childhood education can enrich the intelligence of a child. Quality early childhood education comprises activities such as playful learning, provide learners with diverse problems to solve, subject learners to interactive activities such as reading aloud and conversations, expose learners to collaborative learning, the list may continue for sometime. This is supported by scholars (Vieriu & Petrea,2025) who posit that in postnatal practices parents need to expose children to educational resources such as story books, and provide them with a room to interact with others as much as possible. This practice enhances child's intelligence.

4 Prevalence of awareness on foods and practices for improving intelligence

The literature is articulate on foods useful for child brain development. However, it is silent on the prevalence of awareness on foods and practices enhancing intelligence in prenatal and postnatal periods. The awareness and practices herein referred include societies intentionally providing appropriate foods and practices enhancing intelligence development in prenatal and post-natal periods. To say differently, there limited knowledge on awareness and practice in percentage on well informed and practising population about foods and practices useful for developing intelligence. In the same way, as has been noted, there is limited information the percentage of population who actually practice the knowledge they have on the same. Again, it is not known what percentage of populations by education levels are aware about food promoting intelligence. This actually makes us fail to understand the intensity of awareness and practice in providing food good for brain development among expectant mothers and children.

Furthermore, some of government documents available are too technical for someone who is not a health professional to easily translate the same into practice. For instance, instead of advising the kind of

food to take and the purpose for the same, the documents are full of narrations on minerals, vitamins to take, but what one should specifically take for overall good health outcomes. One example of these documents is from Tanzania Food and Nutrition Policy of 1992, The Tanzania Food and Nutrition Guidelines of 2023 (URT, 1992; URT, 2023). In other words, there are some government efforts in place to ensure people (children) have good health. However, in the two documents the development of intelligence or brain is not mentioned anywhere, but in the guidelines it is mentioned once. The policy and its guidelines needs to be repealed to focus more on child and adult brain development and maintaining practices so that the people translate the policy with intent and effectively. In the same way, The Child Development Policy Tanzania mentions about child rights including the right to life among others. In the right to live the child has to be provided with quality food and nutrition among others. In my opinion, the policy was required to show foods that develop the brain of a child in prenatal and postnatal periods so that citizens know and use the best food types and practices to improve the intelligence of Tanzanians (2008). The Tanzania Child Act of 2009 as repealed in 2019 mentions about the prison or individuals as designated by the prison to provide diet and nutritious food to a child when the mother of the same is imprisoned. It could be useful for the Act to list compulsory foods good for the development of the brain of a child. Indeed, the Education and Training Policy in Tanzania (2014; 2023 version) does not list foods for children to take for brain development so that teachers, parents and students are guided accordingly. Figure 1 is a summary of the entire paper indicating some of enablers in creating an intelligent nation.

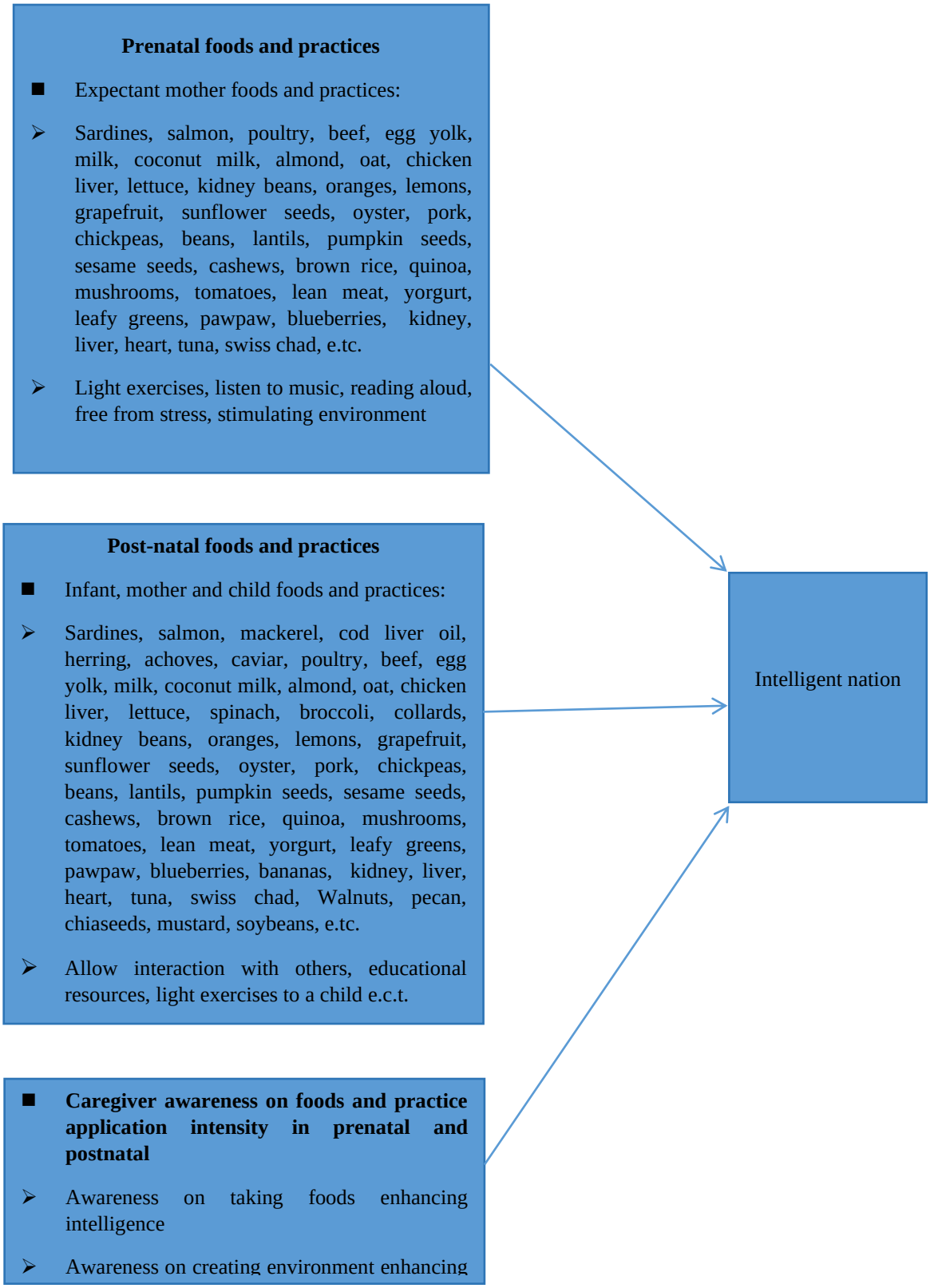

Figure 1: Enablers in creating intelligent nation

- Figure 1 theorises use of certain foods and practices in prenatal and postnatal periods enhance intelligence of an unborn and a newborn. Further, the Figure theorises that caregivers awareness on

foods and best practices and their application intensity in prenatal and postnatal promote intelligence of an unborn and a newborn. An ultimate outcome is creating a nation with intelligent people.

5 Conclusion and policy implications

5.1 Conclusion

Parents, guardians and teachers need to deliberately provide foods which significantly contribute to child brain development before and after birth. Expectant mothers need to be exposed to various intentionally created environment to promote child intelligence. It is paramount creating rich environment and providing brain development appropriate foods contributing to child intelligence. It seems most countries have food policies, but talk a little about the type of food important to take for the health of the brain. In principle, there are various food varieties and practices which can promote child intelligence before and after birth.

5.2 Policy implications

Researchers in their respective countries need to unearth the prevalence of awareness and application of best practices well known for the purpose of improving the intelligence of made children in different nations in the world. Knowing percentages of adult population with some knowledge and with intentional best practices for improving intelligence among children. This is to say understanding the percentage of population which apply the best practices to nurture the brain of a child.

In case in some localities or regions the awareness is low, there is need of introducing action research projects focusing on creating awareness in such parts of a country where there is low population awareness on foods promoting intelligence in their localities. Of course, the projects need to be established in areas with lowest prevalence of of awareness on foods and environment stimulating child brain development.

Food and/or nutrition policies/guidelines which do not incorporate the concept of intelligence development need to be repealed to focus more on maternal mother, child and adult best practices for brain development so that families and nations make intelligent children.

National governments have to show clearly in their food and nutrition or child policies foods for improving intelligence before and after birth. Food policies/child policies and their guidelines need to identify foods expectant mothers and children need to take regularly for a nation general brain health.

National education policies need to list foods and practices that enhance intelligence in prenatal and postnatal periods so that teachers, students and parents alike use the policy to provide or take foods important for child's brain development.

Governments, ministry of health and education need to develop policies proposing foods enhancing intelligence based on zones. Each zone with a list of foods improving intelligence based available edibles. This enables people within their localities (zones) concentrate on taking foods for brain development available in the places.

6 References

1. Admin-science. (2024). Top 10 Anti-oxidant-rich foods to include in your pregnancy diet. https://pregnancyarchive.com/blog/top-10-antioxidant-rich-foods-to-include-in-your-pregnancy-diet
2. American Psychological Association. (2029). Top 20 Principles from Psychology for early Childhood teaching and learning. https://eric.ed.gov/?q=source:%22American+Psychological+Association%22&ff1=pubReports+-+Descriptive&id=ED602441
3. Anderson, M., & White, J. (2020). Prenatal stimulation and early cognitive development. *Journal of Child Psychology*, 45(3), 2015-2030.
4. Brown, A., & Lee, C. (2022). Enhancing learning through intelligent tutoring systems. *Educational Technology Research Journal*, 25(3), 45-60.
5. Cheng, C., & Tam, M. (1997). "Multi-models of quality in education" *Quality assurance in education*, 5(1), pp. 22-31.
6. Elansary, M., & McCoy, D. (2022). Maternal mindset and early childhood intelligence. Havard Gazette.
7. Nolvi, S., Merz, E.C., Kataja, E., & Parsons, E.C. (2022). Prenatal Stress and the Developing Brain: Postnatal Environments Promoting Resilience. Biological Psychiatry, 942-952. https://www.biologicalpsychiatryjournal.com/article/S0006-3223(22)01853-4/pdf
8. Happypreggie. (2021). List Of 20 Types Of Foods That Will Help To Develop Baby's Brain In The Womb. https://www.happypreggie.com/blogs/list-of-20-types-of-foods-that-will-help-to-develop-babys-brain-in-the-womb
9. Harvad Health Publishing. (2024). Foods linked to better brainpower. Havard Medical School.
10. Hunt, E, (2011). Human intelligence. Cambridge University Press.
11. Johnson, A. (2021). The role of intelligence in national Development. *Globa Policy Journal*, 34(2), 145-162.
12. Johnson, R., & Miller, S. (2022). The role of parental vitamins in cognitive development. American Journal of Obstetrics & Gynecology, 227(1), 45-60.
13. Kuzemchak, S. (2022). The best foods for baby brain development. Parents Magazine.
14. Lehmann, J.K., Nuevo-Chiquero, A., & Vidal-Fernandez, M. (2016). Birth order and cognitive development. Journal of Human Resources, 310-325.
15. Smith, T., Jones, P., & Carter, R. (2021). Nutrition and fetal brain development. A review Journal of Maternal Health, 19(4), 310-325.
16. Smith, J. (2024). The impact of nutrition on brain health. Academic press.
17. Sternberg, R.J. (2019). Human intelligence: An introduction. Cambridge University Press.
18. URT. (2023). Tanzania Education and Training Policy 2014, *2023 Edition*. Ministry of Education, Science and Technology.
19. URT. (2019). *The Law of Child Act*. URT
20. URT. (1992). Food and Nutrition Policy for Tanzania. Ministry of Heath.
21. URT. (2023). Tanzania Food and Nutrition Guidelines. Ministry of Health.
22. URT. (2008). Child Development Policy Tanzania. United Republic of Tanzania.