

Early Childhood Development (ECD): A Baseline Study of ECD Insaka - Young with Potential Project Plan International Zambia

Dennis Kuyenda Lembani- Ph.D.

The University of Zambia- MAD- IDE-21106213. Department of Development Studies.

***Corresponding Author:** *Dennis Kuyenda Lembani- Ph.D, The University of Zambia- MAD- IDE- 21106213. Department of Development Studies.*

Abstract: *Scientific research has confirmed that in the early years of a person's life, there are more than one million neural connections formed each second and this process is never repeated. Early Childhood Development (ECD) looks at enabling children achieve their full potential, by ensuring all aspects needed for them to thrive is provided. The main areas Early Childhood Development focuses on are health care, nutrition, child protection and security, opportunities for early learning, and responsive care giving. Early Childhood Development Insaka project looks at ensuring the selected communities are well informed about the elements that are key for child development, however there was need to assess the status of the project outcomes before implementation so as to effectively implement the project and also measure the projects impact at the end.*

The first years of life are significant, because what happens in early childhood can matter for a lifetime. Science shows us what children must have, and what they need to be protected from, in order to promote their healthy development. Stable, responsive, nurturing relationships and rich learning experiences in the earliest years provide lifelong benefits for learning, behaviour and both physical and mental health. In contrast, research on the biology of stress in Early Childhood Development shows how chronic stress caused by major adversity, such as extreme poverty, abuse or neglect can weaken developing brain architecture and permanently set the body's stress response system on high alert, thereby increasing the risk for a range of chronic diseases.

"From pregnancy through early childhood, all of the environments in which children live and learn, and the quality of their relationships with adults and caregivers, have a significant impact on their cognitive, emotional and social development." – Jack P. Shonkoff.

"The child's right to personality is meaningful from the moment of birth." – Gary B. Melton

Keywords: *Early Childhood Development, Child Protection & Security, Nurturing Care.*

1. INTRODUCTION

Early Childhood Development (ECD) is significant in a person's life. There is strong and growing evidence that that high-quality care in the early years, 0-6 years, can act as a springboard for success in adult life. It is critically understood now understand that the period from pregnancy to age 3 is the most critical in a life of a child. This is when the brain grows faster than at any other time; 80% of a baby's brain is formed by this age. For healthy brain development in these years, children need nurturing care – stable environments with conditions that promote health, nutrition, security, safety, responsive care giving and opportunities for early learning. Nurturing care is about children, their families and other caregivers, and the places where they interact from.

1.1. Statement of the Problem

In spite of the marginal increase in the number of children accessing Early Childhood Development, the ZDHS (2018) indicates that 35% of children Under five (5) are stunted, 12% severely stunted with just 29% having access to early learning experience. Many of these children are affected by both monetary and non-monetary poverty. An estimated 54.5% of the population lives below the national poverty line. 40.9% of children suffer from at least three deprivations or more (e.g., lacking access to nutrition, education, health, water, sanitation, adequate housing). This is coupled with the rise in

numbers of teenage pregnancies (15-19) at 29% calls for innovative action. Vital statistics data show that children of teen mothers are at greater risk of low birth weight, complications of the mother's pregnancy and delivery, and health problems associated with poor perinatal outcomes; greater risk of perinatal death; lower Intelligence Quotient (IQ) and academic achievement later on, including a greater risk of repeating a grade; greater risk of socio-emotional problems; a greater risk of having a fatal accident before age one; and finally, a greater probability of starting one's own family at an early age.

Plan International Zambia is a child-centered development organization that has been working in Zambia since 1996 with its presence in Eastern Province, Lusaka Province, Luapula and Central Provinces. The organizational focus has been in the areas of health, early childhood care and development, child participation and protection, youth and women economic empowerment and gender. Plan International Zambia has been implementing the Early Childhood Development (ECD) Community Insaka - Young with Potential" project in Chipata District of Eastern Province. The Early Childhood Development Community Insaka – Young with potential project presents an innovative approach of delivering Early Childhood Development at community level using existing community service provision structures. This consists of the establishment of Insaka (Mphala in Chewa), which acts as a hub for the following:

- i) Community engagement around nurturing care;
- ii) Delivery of parental counselling through one on-one home visits and group counselling sessions by Community Based Volunteers (CBVs)
- iii) Delivery of a package of essential ECD services in health, nutrition, early education and protection, leveraging existing community outreach services.

The Early Childhood Development project is being implemented in four traditional villages in Paramount Chief Mpezeni and Chief Maguya's Chiefdoms in Chipata District and these are as follows; Kaluba and Feni communities in Paramount Chief Mpezeni's chiefdom and Maguya and Nsingo in Chief Maguya's Chiefdom. All these four communities are rural societies with a very low standard of living; and with the general population living below the poverty line.

2. BACKGROUND OF THE PROJECT

The rationale for the project is to contribute to Early Childhood Development in Chipata District by:

- (i) Ensuring parents and caregivers, male and female, are responsive care-givers for their children.
- (ii) Supporting sub-national and community-level stakeholders have strengthened capacity to increase access to quality early childhood development opportunities.

2.1. Main Objective of the Study

The main objective of the baseline study was to get an understanding of what the targeted communities understand about Early Childhood Development (ECD), the key elements of nurturing care and to what extent the key elements of nurturing care are being executed as they nurture their children.

2.2. Specific Objectives of the Study

The specific objectives of the baseline study were to:

- (i) Assess community leadership and members understanding of early childhood development and nurturing care.
- (ii) Assess the parents and caregivers understanding of early childhood development and nurturing care.
- (iii) Learn prevailing gender views as it relates to nurturing care in the communities.
- (iv) To gain an insight on the prevalence of cases of disabilities in the communities.
- (v) Gain a general understanding of literacy levels in the four communities.
- (vi) Learn the challenges adolescents are facing in the communities in efforts to understand the causes of teen pregnancies.

The learning from this study was to guide the project team in determining key focus areas necessary to bring about transformative change in nurturing practices in the four target communities.

3. RESEARCH METHODOLOGY

The sampling technique that was employed to carry out this study is purposive. Purposive sampling involves selection of informants based on an important characteristic under study, such as, position in society (for example, community leader or influential ordinary households) with specific cultural knowledge. The information is selected with the assistance of local leaders and other local persons. However, purposive sampling was used to select households with children below six (6) years, headmen, and adolescent caregivers. A total of 306 were sampled, data collection involved the administration of One-on-One interviews and Focus Group Discussions (FGDs). The study employed paper-based questionnaires having notified the village headmen of the selected villages in their respective communities. Data was collected within a period of 5 days by 3 project team members and 19 members of Plan International's Youth Advisory Panel (YAPs).

The first three (3) days were concentrated on the two communities in Paramount Chief Mpezeni's Chiefdom and the remaining two days were focused on the two communities in Chief Maguya's Chiefdom. In each community, four data collectors were assigned to conduct Focus Group Discussions (FGD) as a team, whilst the rest of the data collectors concentrated on administering the simplified household Questionnaire. Each data collector was assigned a minimum of 19 households for the entire duration of the data collection period.

3.1. Data Collection Instruments

The instruments of data collection that which were employed for this study were the following:

- i) Questionnaire for Traditional Leaders (Headmen).
- ii) Focus Group Discussion guide for men and women
- iii) Focus Group Discussion guide for adolescents.

3.2. Sampling Size

The 15 villages that are catchment areas of the ECD project were selected, this was because of the proximity to where the ECD centers would be constructed and population of interest groups in each of the four communities.

- (i) Katamukwa – 2 villages.
- (ii) Feni – 5 villages.
- (iii) Maguya – 4 villages.
- (iv) Nsingo – 4 villages.

The Households (HHs) in every village with children who were under 6 years of age were purposively sampled and the household questionnaire administered to the available parents and care givers. In each village, the village headman was tasked to assemble individual primary groups of 5 -8 adolescent girls, adolescent boys, men and women to participate in Focus Group Discussions (FGDs). The selection of the groups was purely based on availability. The following groups participated in the FGDs from all four communities:

- (i) Katamukwa – Adolescent Boys and Women
- (ii) Feni – Adolescent Girls and Women
- (iii) Maguya – Adolescent Boys, Adolescent Girls, Men and Women
- (iv) Nsingo – Adolescent Boys and Men

However, in each village, a questionnaire was administered to each village headman who was responsible for each of the 15 villages in the respective communities.

3.3. Ethical Consideration

It is significant to indicate that confidentiality and anonymity were considered and participants voluntarily participated in the study and there were no payments made to them. Information obtained from the study was strictly for use for decision making, understanding of the Early Childhood Development within project parameters and its significant objectives.

4. FINDINGS OF THE BASELINE STUDY

The following were the results of the Baseline study conducted in the targeted communities of Chipata District of Eastern Province of Zambia:

4.1. Quantitative and Qualitative Results

The baseline study had a sample size of 306 caregivers representing 306 households, the data collecting tool did not capture the sex of the caregivers 15 headmen/ influential leaders all were male, 15 adolescent males, 15 adolescent females, 15 adult women and 15 adult men. 228 of the households were male headed which represents 75% of the total households sampled. Only 25% of the sampled households were female headed.

4.2. Demographics

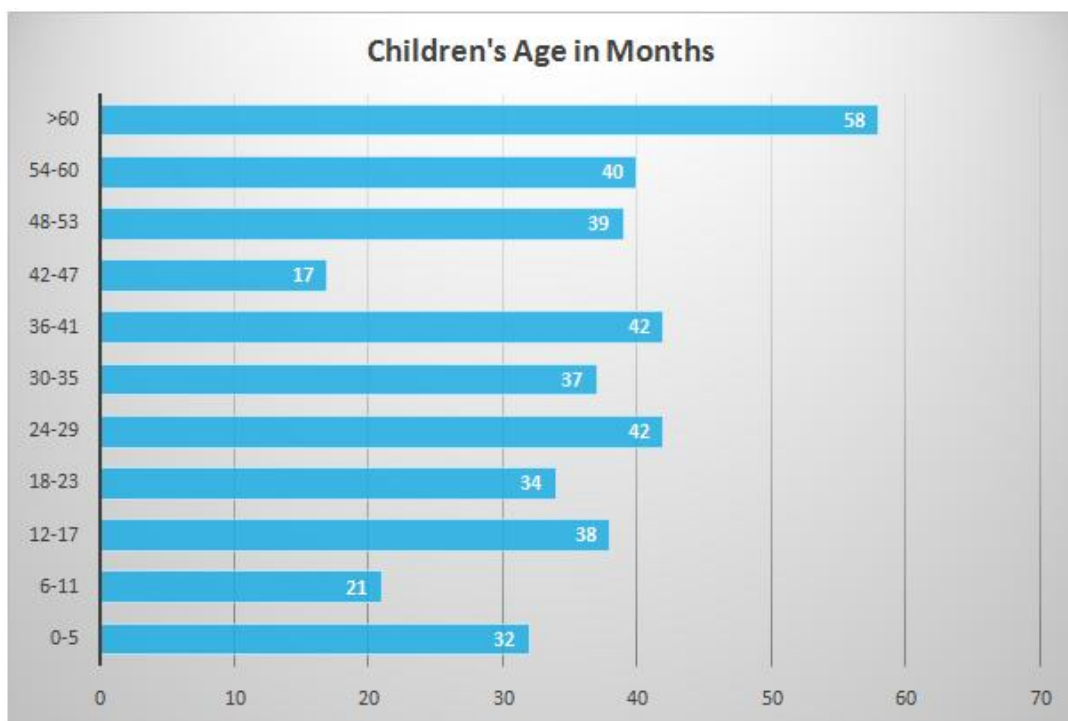


Figure1. Children's Age in Months

Source: Field Data: 2022

As per figure above, there were 400 children aged between 0-92 months in the 306 households sampled. The bar chart above shows age disaggregation of the children by months. The bar chart illustrates that most households sampled had children older than 60 months, there were 42 children in the age range 24-29 months and 36-41 months. The age range 42-47 had the lowest number of children followed by the age range 6-11 months.

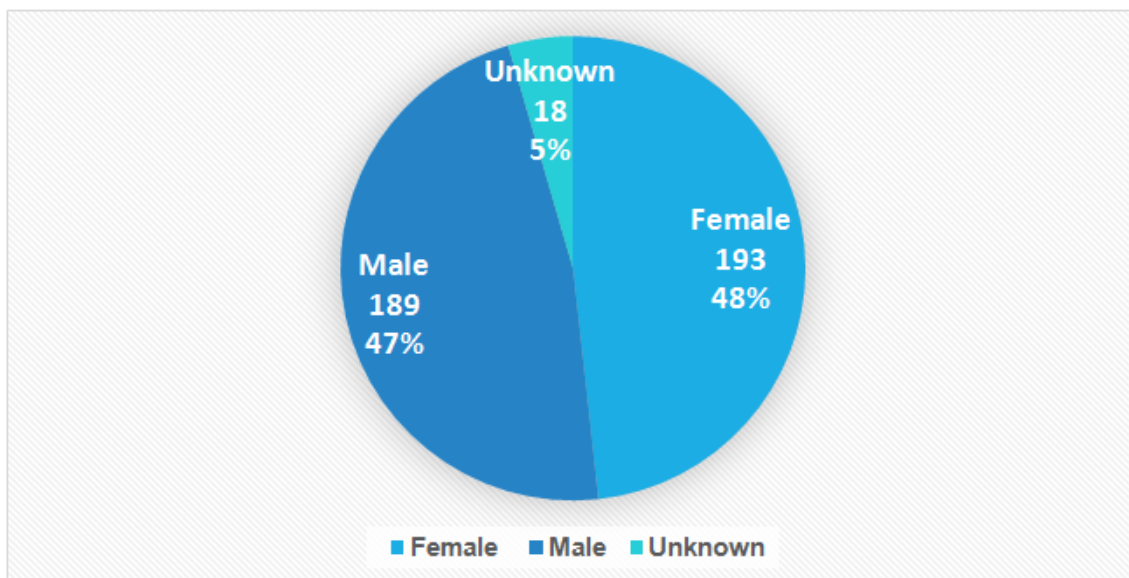


Figure2. Children with Disability

Source: Field data 2022

As illustrated by the above chart, 193 of the total number of children were females and 189 were males, 18 of the 400 children had unknown sexes, and 2% (7) of the children had a special disability.

4.3. Literacy and Levels of Education

In order to establish the literacy levels of the study population, caregivers were asked if they had attended any formal schooling and also the level of education they had reached. The interviewers were also assessing whether the caregivers were able to read a full sentence in their lives in the society.

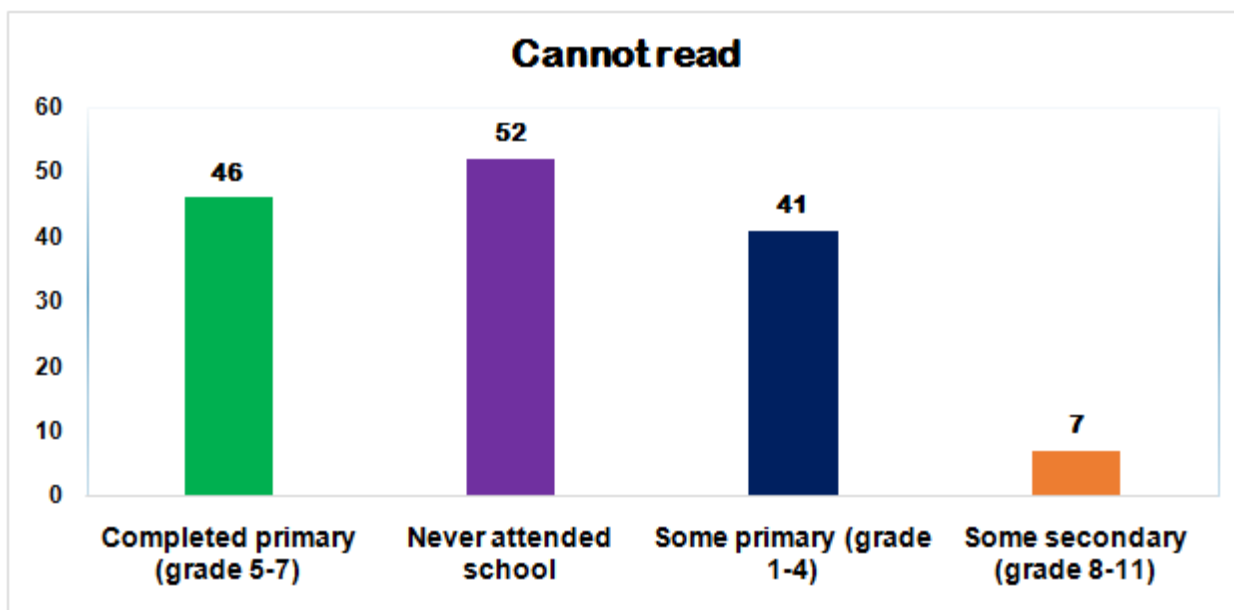


Figure3. Parents & caregivers that could not read

Source: Field data 2022

A total of 146 caregivers could not read a full sentence this accounts for 47% of the total sampled population. The chart above illustrates that 36% (52) of caregivers who could not read had never attended school, 31% (46) of them had completed their primary and 28% (41) had only gone up to the 4th grade. Those who reached secondary level education recorded the lowest levels of illiteracy.

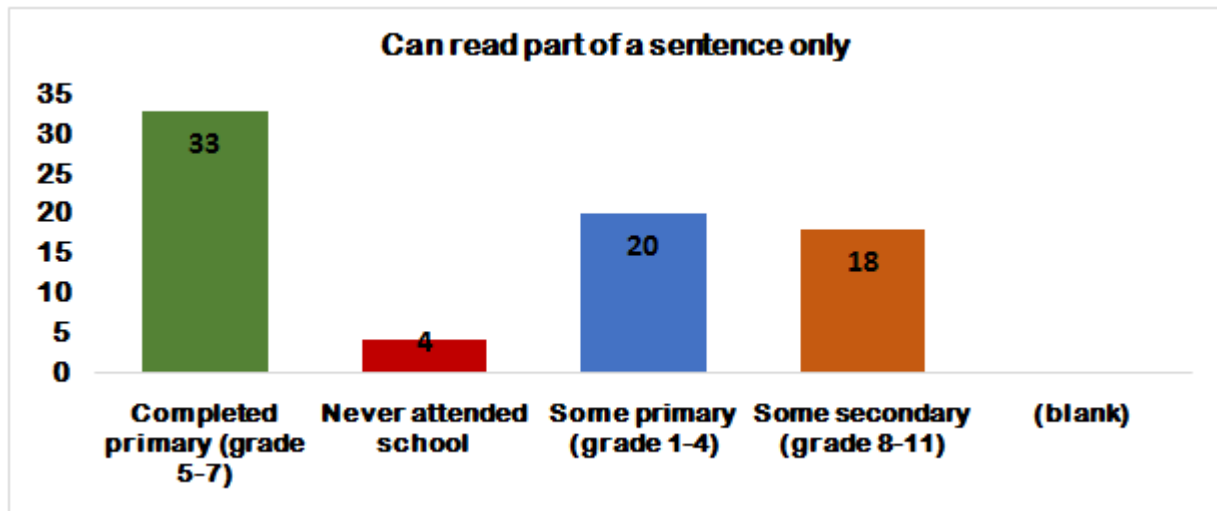


Figure4. Parents or caregivers that could only read part of a sentence

Source: Survey data 2022.

Figure 4 depicts the number of caregivers that could only read part of a sentence and their level education. From the 306 caregivers sampled 75 had responded that they can read only part of a sentence, 53 (33 completed primary, 20 attended grades 1-4) caregivers who had indicated that they could read part of a sentence had at least attended some primary school level education in their lives.

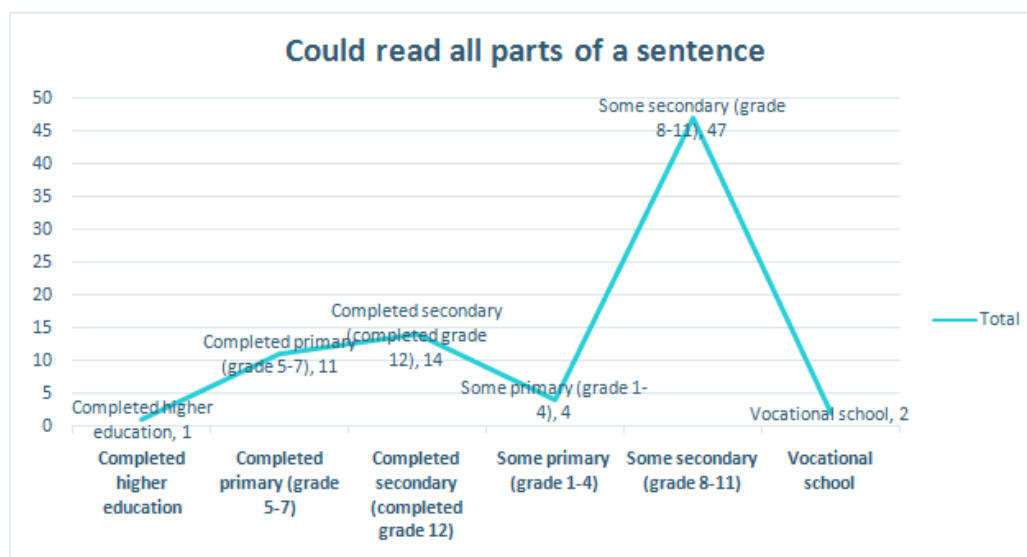


Figure5. Parents & caregivers that could read all parts of a sentence

Source: Survey data; 2022

The above line shows the number of caregivers that could read all parts of the sentence, most people who could read who sentence (47) had some secondary level of education, followed by those that had completed secondary level education (14).

4.4. Elements of Nurturing Care

Caregivers were asked if they knew the elements of nurturing care that are essential and necessary for the healthy growth and development of all children. From the 306 caregivers sampled only 72 (24%), indicated that they had been trained in parental counselling covering health, nutrition, hygiene, stimulation and child protection prior to 1st June, 2021, 76% indicated had not been trained in parental counselling. All the 30 (100%) caregivers that had been trained as ECD volunteers indicated to have knowledge of the elements found in nurturing care.

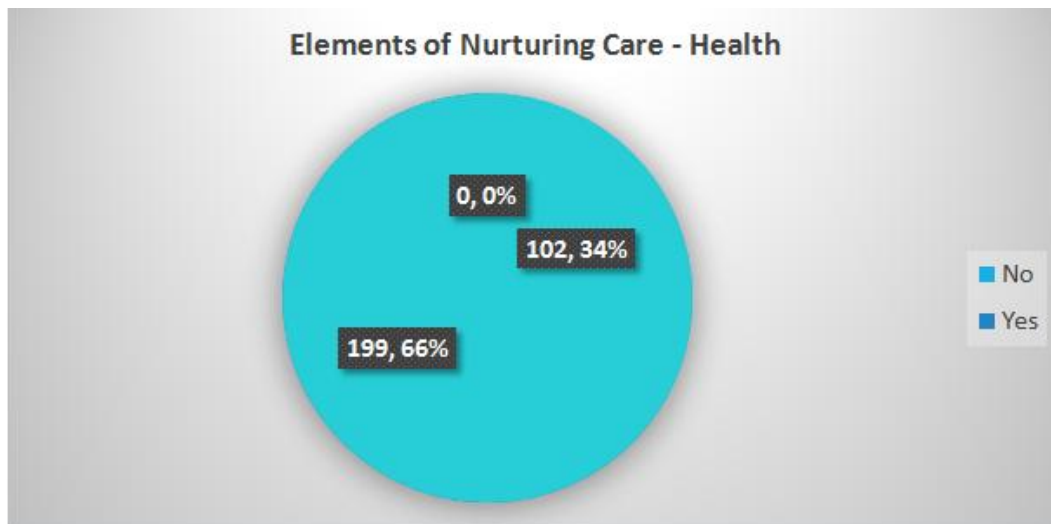


Figure6. Knowledge of Health as a nurturing care element

Source: Field Data 2022.

As per figure above, the depiction from the sampled population, 199 (66%) revealed they were aware that health is one of the nurturing care elements vital for a child’s development while 102 (34%) responded that they were not aware, as shown on the above chart. From the 301 respondents, only 30 had indicated that they had been trained as volunteers in ECD counselling prior to 1st June 2022 and 274 revealed they had not been trained and 2 did not respond. The 199 who responded they were aware also gave explanations on how the practice of the health element of nurturing care. Among the explanations given were, taking a child for Under 5 check-ups at a nearby rural health center, feeding the child well to prevent malnutrition, taking child to the clinic on time once they are sick, preventing illness by following good health practices.

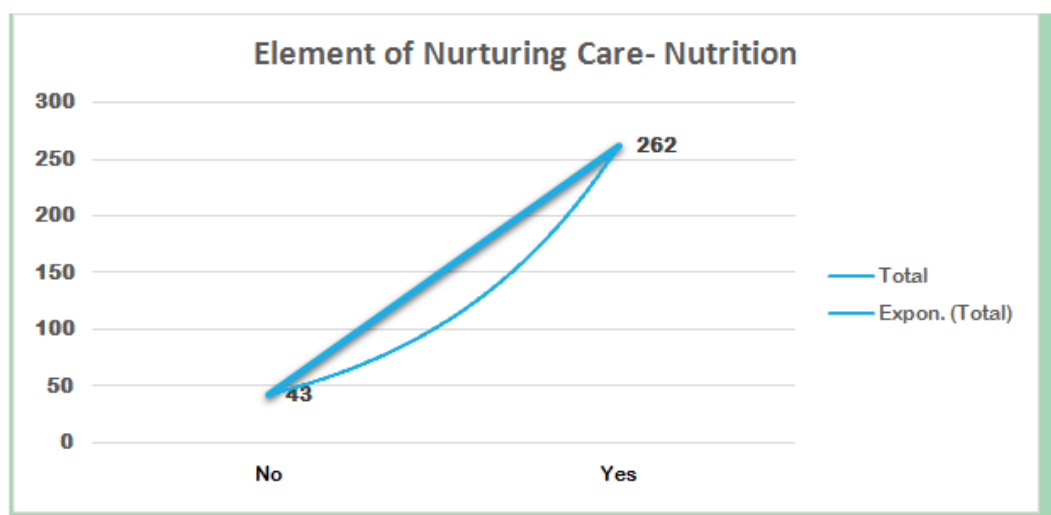


Figure7. Knowledge of Nutrition as a nurturing care element

Source: Survey data: 2022

As per line above, when asked if the respondents knew nutrition as one of the nurturing care elements prior to 1st June 2021, 86% (262) of the caregivers responded to having knowledge of nutrition being one of the nurturing care elements in relation to nutrition, 14% (43) indicated they were not aware that nutrition was one of the elements of nurturing care, as shown above. For the 262 respondents who said yes, they stated giving a child a balanced diet, exclusive breastfeeding a child and only introducing them to solid food after 6 months, feeding a child according to health guidelines, feeding a child three or more times daily as a way of practicing nurturing care.

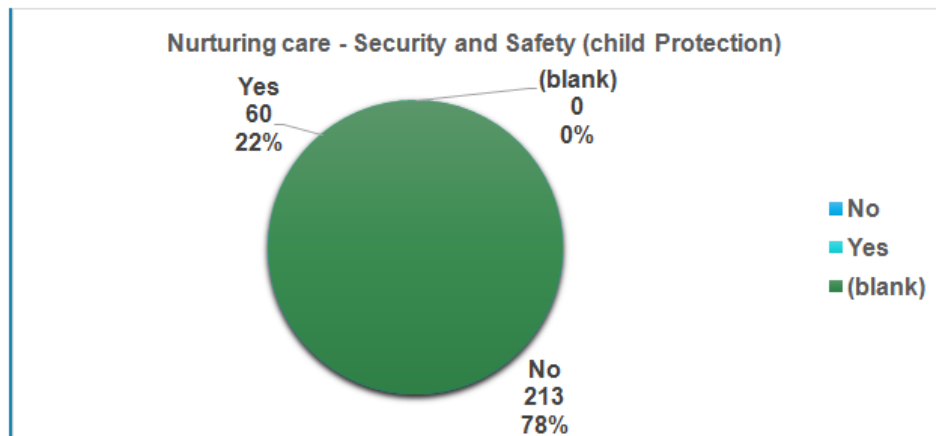


Figure8. Knowledge of Security and Protection as a nurturing care element

The respondents were probed if they knew child protection as one of the elements of nurturing care 213(78%) said they had no knowledge of the relation of child protection and nurturing care, and 60 (22%) responded to be aware of the relation between child protection and nurturing care, as shown in the above chart. Ensuring the child is in safe hands, finding better ways of disciplining a child rather than beating them, ensuring there is no harm near a child were some of the examples of security and safety (child protection) cited by caregivers and parents.

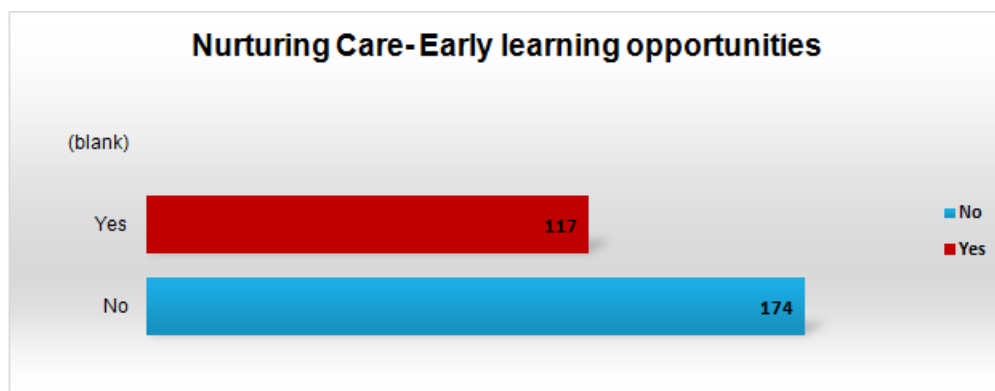


Figure9. Knowledge of Early learning opportunities as an element of nurturing care

Source: Field data 2022.

From the 291 respondents who were asked if they knew that early learning opportunities is one of the nurturing care elements in the communities, 174 (59%) indicated that they did not know while 117 (41%) indicated they were aware. When asked the importance of Early learning some of the answers given were; it shapes a child’s future, it provides guidance on what is right and wrong, helps child learn songs about the alphabet.

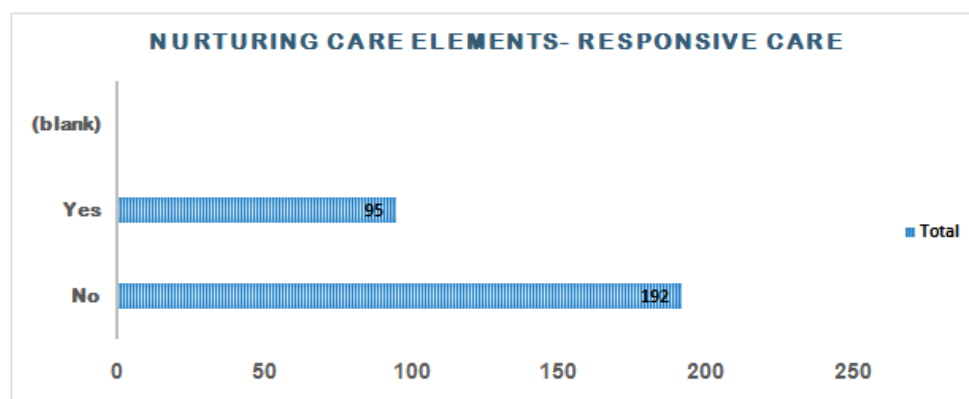


Figure10. Knowledge of Responsive care as a nurturing care element

Source: Survey data 2022.

Responsive care was among the least known nurturing care element, only 33% respondents indicated that they have knowledge of responsive care being one of the nurturing care elements, 64% said they did not. No beating a child, showing love to a child, playing with child, singing songs, providing a child's need, ensuring that a child is clean at all times were some of the examples of responsive care respondents mentioned.

➤ **Headmen's Responses**

The survey also targeted influential leaders (headmen) to establish their understanding of nurturing care and its importance prior to 1st June, 2021. A total of 15 headmen responded to the survey, all respondents were male, who on average had served for 10 years as headmen. 87% (13) of the respondents had an idea what ECD is all about although most respondents would always link it to nutrition only. 13% (2) of them had no idea of what ECD is all. When asked if there is need to prioritize issues of children and young people in Early Childhood Development, 94% of the respondents said yes, only 1 respondent did not agree to that effect.

The headmen were asked what they understood by the term nurturing, the following below were their responses:

"Nurturing care is teaching children on cleanliness, respect, survival skills to farm and keep livestock."

Headman 1.

"Feeding the child and educating them in line with the village morals

Is to care for a child and show him or her love."

Headman 2.

"This is simply taking the child for under-five, so that they may get the needed vaccinations."

Headman 3.

When asked if they knew the key elements of nurturing care that are essential for the healthy growth of a child, the bar chart below shows their responses. 100% of the total sampled headmen mentioned nutrition as one of the essential elements of nurturing care, early learning and health were among the well-known elements with 80% and 74 % of the respondents mentioning the two. Security and safety were the least known element with only 27% of the respondents highlighting it as one of the nurturing care elements.

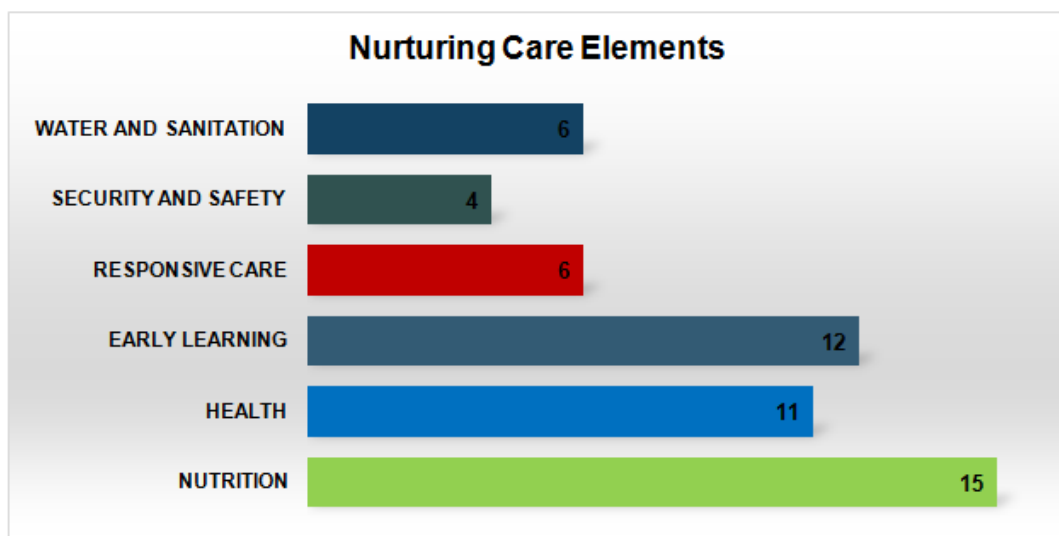


Figure11. Headmen's knowledge of nurturing care elements

Source: Field data 2022.

The headmen were also asked how prior to June, 2021 were ensuring households receive components of nurturing care, some of the responses were:

“Encourage frequent under 5 visits.”

“Encourage farming so that they can provide for their children.”

“By encouraging and stating the importance of giving the child the right food and taking them to school.”

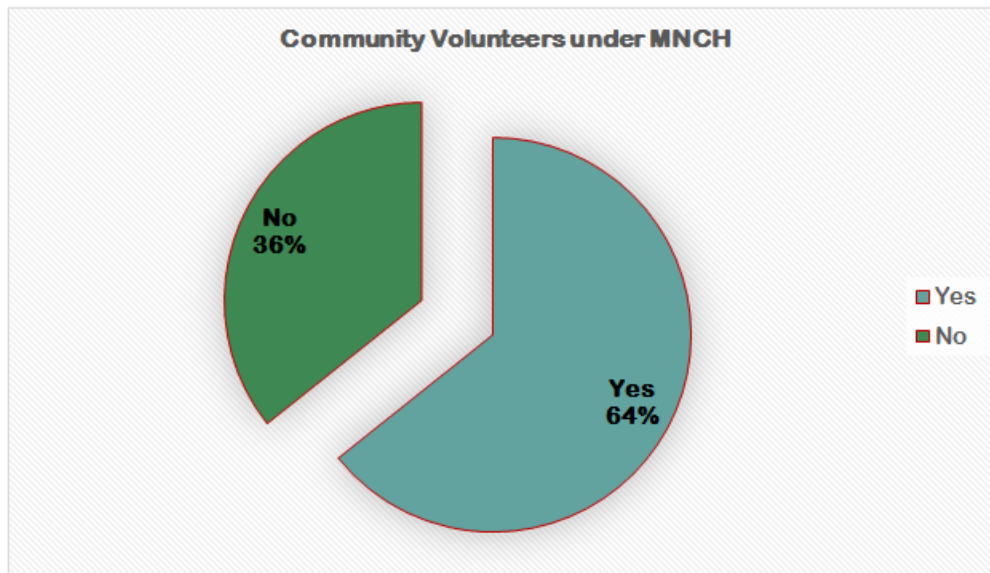


Figure12. Community volunteers under MNCH

Source: Field Data 2022

64% of the headman agreed to having community volunteers under MNCH who are providing counselling to caregivers/ parents in their respective villages, as shown on the above pie chart. When asked to highlight the immediate social economic challenges that children between 0-6 years faced in Nsingo, Maguya, Maulawo, and Kaluba prior to 1st June, 2021 and the following challenges were revealed:

- (i) Lack of infrastructure to use for learning purposes in the communities.
- (ii) High levels of poverty, hence parents were unable to meet basic needs for their children.
- (iii) Vulnerability due to negligence of parents and caregivers in the communities.

4.5. Focus Group Discussions

A total of 10 Focus Group Discussions (FGDs) were carried out, with participants being disaggregated by age and sex. Each group had 5-8 participants, 3 of the group discussions were targeting males aged 15-19, however when selecting participants males above the age of 20 were also included in the group discussions. 2 of the 10 group discussions were targeting females aged 15-19, however females above the age of 20 were included in the group discussions. The other 5 groups were targeting women and men aged 20 and above (adults).

In all the focus group discussions that were conducted, there was no distinction between males and females with regards to the responses they gave during the discussions. For those between the age of 15-19, when asked if they knew what nurturing care was and if they thought they had received nurturing care from their parents. The most common responses from both male and female participants were that nurturing care involves the following;

- i) Feeding the child
- ii) Teaching respect and morals
- iii) Ensuring a child is educated
- iv) Prioritizing a child’s health

When asked if they received nurturing care from their parents most common responses were as follows:

- (i) Yes, because their parents educated them
- (ii) Yes, because they provided food
- (iii) Yes, their parents bathed them
- (iv) Yes, they taught their parents taught them respect and how to live with people

When asked what they could do differently from their parents, some of the responses that were highlighted include;

- As parents they would not beat their children like their parents but rather just talk to them and correct them
- They would take their children to school
- They would rather invest in business than taking their child to school as there are no jobs.

When asked what challenges they encountered in their communities the most common answers were the following:

- a) Child Early& Forced Marriages and Teen Pregnancies.
- b) High Poor literacy levels in the communities.
- c) Clear understanding of human rights as this restricts some parents from correcting their children.
- d) Alcohol and drug abuse more especially among the youths in the communities.

When asked if they have opportunities in their respective communities, most respondents said no and that they would like to be assisted by establishment of recreation centers in their communities, provision of capital to start a business and some skills training programs as this would help overcome some of the challenges.

For the adult respondents above the age of 20 who were parents/ caregivers at the time of survey, they were asked what period of time (age range) in a person's life was important for parents to nurture well in order for their children to live a productive life as an adult. In their responses the following were the most common responses;

- (i) From the time the baby is born.
- (ii) When the mother is still pregnant
- (iii) From 3 years going up
- (iv) From 4 years going up.

When asked how they were providing or provided nurturing care to their children. The most common response from the participants were;

- i) Teaching them respect
- ii) Teaching them farming
- iii) Teaching them house chores
- iv) Washing for them
- v) Feeding them well so that they grow well and healthy
- vi) Ensuring they have a formal education.

Some parents and caregivers highlighted the following challenges in parenting;

“We have fared well but sometimes our children don't listen to us; some don't tell us that they have seen their period until they fall pregnant.”

“Television is also contributing to our failure; children are learning bad habits from the television.”

When asked who they thought was responsible for ensuring children receive nurturing care in a family between a man and a woman, and most recorded responses were;

- i) The father provides the food, the mother prepares and feeds the baby.
- ii) The mother understands the baby’s language and tells the father to provide what the baby needs.
- iii) The Women is the one who takes care of children below 5 years
- iv) The woman or the mother is the one in charge of the girl children and the boys it’s the father/ man when they reach puberty
- v) Unless for a single parent then all the duties are for the available or present parent.
- vi) Women should be the one in the lead because they are the ones who care for the children by cooking, bathing etc. for the children
- vii) Girls are raised and taught by their mothers in the societies.
- viii) Children from 0-6 years it’s the duty of both parents but mainly it’s the duty of the mother but when they grow the boys are for the men.

From the above responses it can be concluded that most respondents ascribed nurturing care to being more of a woman’s responsibility than a man’s responsibility.

5. LIMITATIONS OF THE STUDY

- The survey did not record the disability status of the caregiver as this might affect the care, they are giving their children.
- Low literacy levels amongst community members hence they could not understand some terms during the study.

6. DISCUSSIONS AND RECOMMENDATIONS

- (i) There is need to assess further community leadership and members’ understanding of Early Childhood Development and Nurturing Care.
- (ii) From the findings it was recognized that most traditional leaders were familiar with health, early learning opportunities and nutrition elements of nurturing care. Responsive care, and security and safety were the least known elements among the traditional leaders. Community members assessed using focus group discussions also attributed nurturing care to nutrition, health and learning opportunities, leaving out security and safety and responsive care.
- (iii) Responses received from the traditional leaders and community members show the need for the project to enlighten the community about all the five elements of nurturing care, and how they complement each other in ensuring a child has an enabling environment for them to thrive.
- (iv) Nurturing care is broader than ensuring the child is well fed, clean and educated, it also involves preventing children from being maltreated, responsiveness to children’s cues, responsive feeding, play and communication and many others (WHO, 2018).
- (v) Health, nutrition and early learning opportunities were the most known elements of nurturing care, security and protection and responsive care were the least known with only 22% and 33 % indicated having knowledge of the two elements respectively. In order to create an enabling environment where children are able to survive, thrive and transform there is need to ensure that all the 5 components of nurturing care are present. Therefore, there is need during project implementation to enlighten and make people understand all the five components of nurturing care putting more emphasis on the elements that are less known by the community members and caregivers.

- (vi) Learn prevailing gender views as it relates to nurturing care; Men spend less time and most of the respondents had the view that a man had to provide for the family, while a woman takes care of the child/ children. They ascribed nurturing care to be a woman's responsibility and financial support to be a man's responsibility especially for children under the age of 5. Global statistics also show that men spend less time providing care for their children especially during infancy (Plan International, 2021). This shows that children are missing out on the care and support from their fathers or male caregiver that might be vital for them to survive and thrive.
- (vii) There are many benefits of men being engaged in nurturing care of their child. Some of the positive outcomes for the child include; high self-esteem, better peer relationships and better capacity to empathy, fewer behavioral problems among boys and fewer psychological problems among girls, and many other (Plan International, 2021).
- (viii) Some respondents were for a view that children are supposed to be cared for by their mothers, the father takes care of the boy child once they reach puberty. The communities view was that nurturing care was a feminine job hence women are supposed to take the dominant role in raising children.
- (ix) To gain an insight on the prevalence of cases of disabilities in the communities; the study showed that only 2% of the sampled children had a disability. Timely identification of children with developmental disabilities is required for early intervention, which strengthens the cumulative process of development, helping children acquire new skills and behaviors to reinforce and strengthen learning.
- (x) Taking care of a child with developmental disabilities potentially places an enormous strain on families, and caregivers experience high levels of stress, anxiety, depression, physical exhaustion, stigma and discrimination. This further increases the risk of mental ill health and social isolation in caregivers (Smythe T, 2020), hence caregivers might need help that caters for specific needs of their child.
- (xi) There might be need for the project to expand its catchment area for the set targets to be met. However, due to low literacy levels, the project might need to include an aspect of adult literacy
- (xii) Generally, the evidence shows that the four communities have very low literacy levels. This in turn might affect some project interventions that might require community members to read and write.

From the results of the study, it can be concluded that the community members, caregivers and parents as well as the traditional leaders are familiar with the health, early learning opportunities components of nurturing care. However, very few caregivers are aware or have knowledge of the security and protection, and responsive care components of nurturing care elements.

Therefore, it is of significant importance for the project to familiarize traditional/ influential leaders, community members as well as parents and caregivers on the nurturing care framework so that they are aware how the five components work together in creating an enabling environment for a child to survive, thrive and transform. There is also need for the project to ensure community members, parents and caregivers fully understand what nurturing care is, as the common understanding only involves ensuring the child is fed, and schooled. The project has a massive role to play in changing some of the gender views prevailing in the communities with regards to nurturing and care.

REFERENCES

- Plan International. (2021). Promoting Men's Engagement in Early Childhood Development: Influencing Package. Plan International.
- Smythe T, Z. M. (2020). Early intervention for children with developmental disabilities in low and middle-income countries - the case for action. *International Health*, 13.
- World Health Organisation. (2018). 1. Assess community leadership and members understanding of early childhood development and nurturing care. GENEVA: WHO

Citation: Dennis Kuyenda Lembani- Ph.D.. "Early Childhood Development (ECD): A Baseline Study of ECD Insaka - Young with Potential Project Plan International Zambia" *International Journal of Humanities Social Sciences and Education (IJHSSE)*, vol 10, no. 2, 2023, pp. 20-33. DOI: <https://doi.org/10.20431/2349-0381.1002003>.

Copyright: © 2023 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.