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Original Paper

Evaluation of Training and Implementation Program for Community-Based Child Growth Monitors and Promoters in Zambia

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STRUCTURED ABSTRACT

Background: Like many other Sub-Saharan African countries, Zambia faces significant challenges of infant and young child survival. Zambia Demographic and Health Survey statistics still records an unacceptably high rate in the most recent statistics at 29.4, 56.4 and 88.5 per 1,000 live births for neonatal, infant and under-five mortality respectively.

Problem Statement: Despite all the efforts being implemented by the government to ensure good health and growth for children, child mortality remains unacceptably high probably due to incompetent performance of Community-Based Child Growth Monitors and Promoters (CCGMPs) which could be caused by many factors including inadequate training. Community-Based Child Growth Monitoring and Promotion (CCGMP) is a relevant complementary activity for many of the interventions that need to be undertaken for the proper growth of children, especially in developing countries due to critical shortage of professional health workers, in view of serious financial and human resources constraints [3].Results will be useful to policy-makers and programme managers for improving training and work conditions of CCGMPs to increase productivity and effective implementation of community-based strategies, in line with the UN's third (3rd) sustainable development goal of "Good Health and well-being by 2020."

Methods: Mixed methods design; cross-sectional survey and qualitative case studies. To increase the strength of the study, triangulation will be ensured by mixing five methods including; cross sectional survey, systematic document review, uninterrupted direct observation, one-on-one exit interviews with mothers, and focus group discussions of the CCGMPs, and by engaging two different types of respondents CCGMPs and mothers. Data for cross sectional survey will be analysed using computer software of SPSS version 22, while data from qualitative cased studies will be analysed using computer software MAX qualitative data analysis version 11.8.0.

Key words: Community-Based, Curriculum, Training, Content, Methodology

1.0 Introduction

Sustainable improvements in child health and nutrition depend on families and communities being motivated to take timely and appropriate actions and being able to see benefits from these actions. An effective program design for child growth monitoring and promotion begins with clarity on its purposes, its scope, training of the service providers and the circumstances in which it functions best. Guidance on the selection of appropriate actions and the content of training is needed to improve child health and nutrition. Community-Based Child Growth Monitoring and Promotion (CCGMP) activities are extremely relevant in countries like Zambia, where there is low awareness of the

causes of malnutrition and where families do not have the necessary information to help them protect and promote their children's health. Applying good training and management principles and an effective monitoring process is as important for effective child growth promotion as it is for any other program activities. Therefore, clear and feasible guidelines for training, designing, implementing, monitoring and evaluating child growth monitoring and promotion programs are important so that strengths and weaknesses in activities of the program can be identified on time for amendment [3].

In Zambia, Child Growth monitoring was introduced in the early 1980's and is carried out country wide with the under-five clinics within the Maternal and Child Health care services. Government realised that to achieve its' health reforms which emphasize the provision of quality health care services as close to the family as possible, collaborating with communities in taking action to improve the health of their children will be necessary. Hence, the Ministry of Health developed structures at community level, the Neighborhood Health Committees that include community members in order to train Community-Based Child Growth Monitors (CCGM) who participate in the provision of child growth monitoring and promotion services at Community level. The Central Board of Health (CBOH) in the year 2001, developed a manual for trained community health workers to use when carrying out child growth monitoring and promotion activities. This manual was meant to address the attention of Community Child Growth Monitors (CCGM) not only for merely weighing children and plotting their weights but to also address counselling mothers/caretakers to take up action that will prevent malnutrition in our children. Growth Monitoring and Promotion (GMP) is one of the key elements of child survival and primary health care strategies in Zambia [4]. The emphasis of GMP has been on monitoring growth rather than the 'promotion' of growth [5]. GMP assesses the growth and development of a child in order to detect the earliest changes and bring about appropriate responses to ensure that growth continues uninterrupted [6].

1.1 Problem Statement

Government has made rigorous efforts in implementing Child survival interventions (CSI) and statistics indicate that child mortality has been reducing. Neonatal mortality rate reduced from 34 in 2007 to 24 1,000 live births in 2014.Infant mortality rate also reduced from 70 in 2007 to 45per 1,000 live births in 2014 and under-five mortality rate reduced significantly from 119 in 2007 to 75 in 2014 per 1,000 live births. Despite these reductions in child mortality rates, the statistics remain unacceptably high. It is important not to forget that, adding the above figures can crudely interpret that the actual Child Mortality rate (CMR) is much higher and minding the fact that there is an under-estimation by 30-40%, since most child deaths, especially those that occur in rural communities, accounting for the larger percentage of the Zambian population, are not recorded. The actual CMR could therefore still be well over 100/1,000 births.

Over the past decade, the effectiveness of GMP as an approach to preventing malnutrition and more especially, the added value of growth monitoring to growth promotion has been the subject of debate. According to Faber (2009) the coverage of Growth Monitoring and Promotion (GMP) is relative and the training consequently the implementation program is considered weak with poor linkage between growth monitoring and promotion activities due to staff ineffectiveness and poor organisational structure [7]. In addition, Griffith [2000] reported that the "Road to health card" is not being used effectively as a tool in monitoring growth and promotion of child health and that a sharp growth faltering occurred in the first year of life so early interventions were vital [8]. This indicates that the CCGMPs are providing incompetent services that are not responding to the need to monitor and promote healthy child growth, by preventing diseases like malnutrition.

Possible causes of this situation could be poor surveillance, poor implementation of Child Survival Initiatives (CSI) most probably due to incompetent performance of CCGMPs which could be caused by many factors including inadequate training. Anecdotal information shows that there are the following gaps in the training and implementation of CCGMP programs: Unclear National curriculum/standards for training and re-training programme for CCGMPs, unclear enrolment requirements and lack of accreditation guidelines training for CCGMPs especially that they are trained by several different stakeholders. Competencies to be attained are undefined and CCGMPs are trained to perform other different roles leading to possible compromise in their execution of tasks in terms of skill and competence.

1.2 Study Purpose

The purpose of the study will be to evaluate training and implementation program for CCGMPs in relation to the effectiveness of services they provide to prevent children's death, illness or malnutrition and improve their health

1.3 Research Question

How adequate is the training programme for CCGMPs in helping them attain their required skills and competencies and enable them provide quality services in order to improve child survival in Zambia?

1.4 Theoretical Framework

A conceptual framework will be developed by adapting concepts from three theoretical models and these are; the

logic model, Sufflebeam's CIPP model is a model of evaluation, an acronym comprising of four elements "context, inputs, processes and products" and Kirkpatrick's training evaluation model as shown in figure 1.

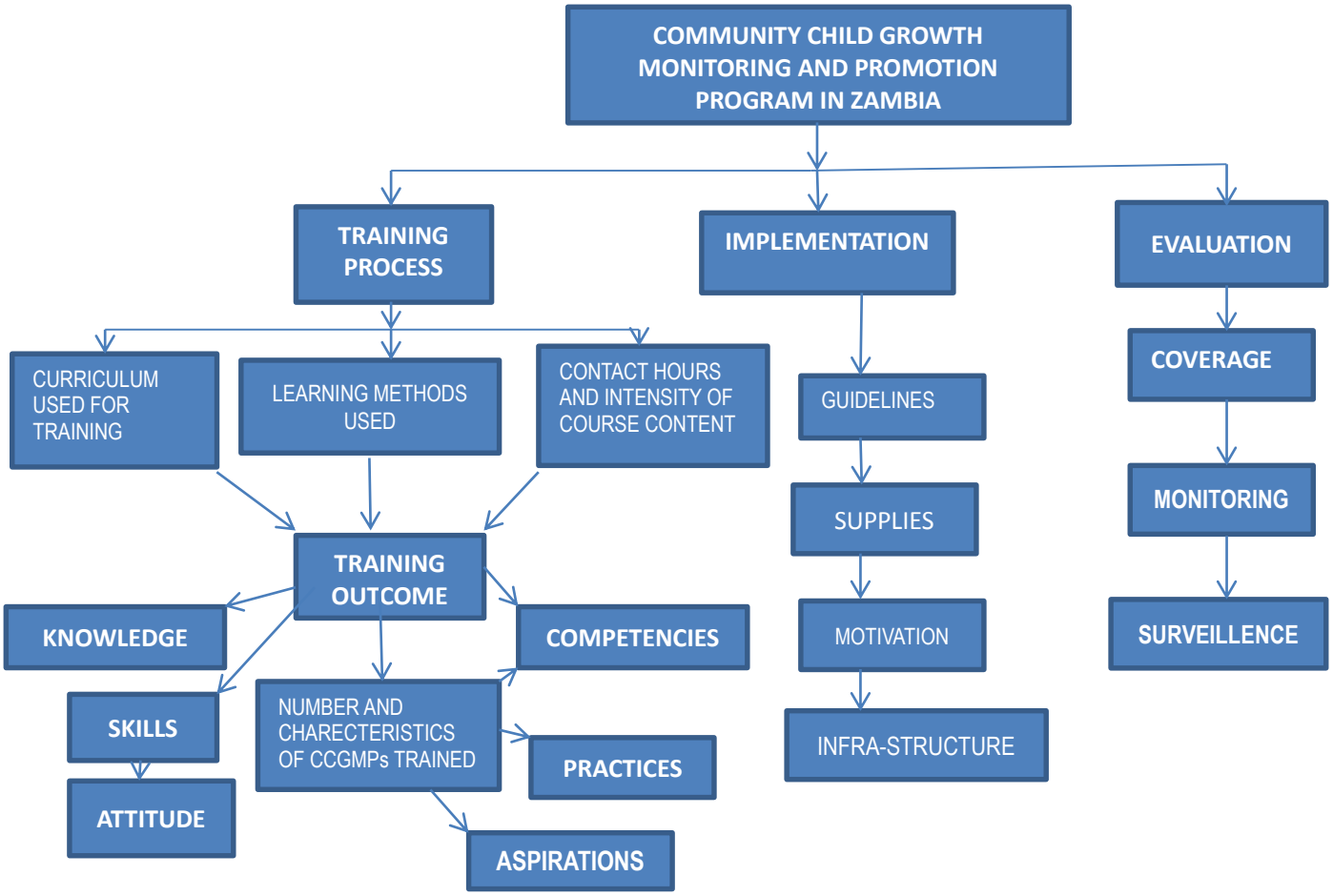

Figure 1: Conceptual Framework

The variables derived from the Powel's Logic Model include what the government's input is towards the current training and implementation package and what it can offer for the CCGMPs' to improve their level of knowledge, attitude, skills, aspirations and competencies in order to enable them implement the program that will have a positive impact on the growth and health of the Zambian children. Underlying a logic model is a series of 'if-then' relationships that express the program's theory of change. A theory of change is a description of how and why a set of activities be they part of a highly focused program or a comprehensive initiative – are expected to lead to early, intermediate, and long-term outcomes over a specified period [6]. Applying this model will help to establish to what extent the goals that were set at the inception of the community-based child growth monitoring and promotion (CCGMP) training and implementation program were being met. Variables that will measure the changed behaviour of the CCGMPs practice after being trained have been borrowed from Kirkpatrick's evaluation model.

Concepts borrowed from the Stufflebeam's CIPP Model provide a systematic way of looking at many different aspects of a teaching curriculum development process and hence it is ideal to help in identifying gaps, so as to be able to review, update and develop an ideal training package for CCGMPs. This CIPP model advocates that the purpose of the assessment and evaluation is not to 'prove' but to 'improve' and it will be applied to evaluate the training package for CCGMP in the context of prioritizing goals, evaluating inputs, assessing the process, context and the product which is the training package for CCGMP. This triangulation approach of mixing three models in the research process meant to strengthen the research process and hence it's outcome.

2.0 Methodology

A mixed methods design will be applied to ensure that research objective are met and to increase the strength of the study, triangulation will be ensured by mixing five methods including; cross sectional survey, systematic

document review uninterrupted direct observation, one-on-one exit interviews with mothers, and focus group discussions of the CCGMPs, and by engaging two different types of respondents; CCGMPs and mothers.

2.1 Study Site

In Zambia, Lusaka an urban district and Chirundu a rural district will be purposively selected in order to necessarily provide a diverse picture of the Zambian society.The two districts will be selected to represent the two main settlement areas with different life styles in Zambia. Lusaka will represent the urban area that has more and better health facilities for access but is highly populated while Chirundu will represent a rural area with limited health facilities leading to a lot of hardships of accessibility of health care services. Then multistage sampling will be applied to select the health centers to be included in the study and these were selected using proportional sampling on the basis of those with larger catchment numbers will have larger samples and they were also selected for accessibility so that the researcher will be able to collect data.

2.2 Study Population

This study will include a population of all CCGMPs at the sampled sites, who have received some training and are currently working with children for the cross sectional survey and for uninterrupted direct observation. Focus Group Discussion (FGD) will include all leaders of CCGMPs working in the sampled sites. Mothers of children will be recruited for the in-depth one-to-one exit interviews.

2.3 Research Design

A mixed method design will be used for the purpose of triangulation in order to validate data. Due to costs and time, the entire study population cannot be included in the study, scientific sampling will be done. Sampling will allow inference of information to other populations, without having to investigate every individual. Reducing the number of individuals by sampling in a study reduces the cost and workload, and makes it easier to obtain high quality information as long as it is balanced and has a large enough sample size with enough power to detect a true association. For a sample to be used, by whatever method it is chosen, it is important that the individuals chosen are representative of the whole population [8]. It is due to this reason that this study has specifically target two different communities that normally exist in Zambia or in any other country in the world, in order to allow for appropriate inference of findings.

Five methods will be used to collect data for this study:

1. Cross Sectional Survey to determine CCGMPs' perception on the effect of training on their performance during service provision.
2. Systematic document review to identify if there are any gaps in training package for CCGMPs'.
3. Uninterrupted direct observation to determine the skills and competencies of CCGMPs as they provide services.
4. One-on-one in depth interviews with mothers to determine their satisfaction on the services that their children receive.
5. Focus group discussions (FGDs) with leaders of CCGMPs to further explore the perceptions and feelings of the CCGMPs in relation to their training and implementation programmes.

In order to ensure triangulation four (4) qualitative data collection methods will be used to confirm the truthfulness of the information that will be collected using other earlier described methods. These are; Focus Group Discussion (FGD) with key informants who are mainly leaders of CCGMPs and In-depth exit interviews of mothers/care givers of children that are being monitored by the CCGMPs.

This research will apply standard social research methods for evaluative purposes, as its specific research methodology, and as an assessment process that employs special techniques unique to the evaluation of social programs. This evaluation study is designed to utilize multiple methods which will include quantitative and qualitative. Research methods are intentionally combines in order to integrate and draw on the strengths of each method to frame the evaluation within theoretical, philosophical and practical perspectives. Data collection tools for each method will be tested in a pilot in order to ensure validity and reliability of data to be collected.

Mixed design will be used in order to clarify the ambiguity that exists on Community-Based Child Growth Monitoring and Promotion (CCGMP) programs with regard to its effectiveness and contribution in making a positive impact on the Nutrition and Health of the children by helping to obtain more details and to discover new information on variables. The methods will include a cross sectional survey which is quantitative and four qualitative case studies and respondents will include CCGMPs and mothers.

2.4 Sample size

To select the sample size for the cross sectional survey, the following statistical formula commonly applied in social and health related research where it is impossible to have the exact total study population size and which helps to select a representative sample size without having to know the exact total study population will be used: The sample size of CCGMPs from each of the two study sites, for the cross sectional survey will be calculated using the following statistical formula:

$$n = \frac{Z^2PQ}{d^2}$$

in which**;** n=the desired sample size, Z=the standard deviation set at 1.96 (or rounded off to 2.0) which corresponds to 95 percent confidence level**,** p=the proportion of the target population estimated to have a particular characteristic in this case it's the trained community-based child growth monitors and promoters (50 percent=.50), q=1.0-pd=degree of accuracy desired is .05 the p-value.

$$n = \frac{(1.96)^2 (.50) (.60)}{(.10)^2} = 184$$

To cater for attrition rate 10% of non-response rate will be adjusted, making a total of 400 CCGMPs will be included as sample size for the cross sectional study. To ensure fair representation, proportional sampling with regard to population size between urban and rural areas while using simple random sampling three (3) areas will be selected from Lusaka and two areas from Chirundu. Furthermore, proportional sampling according to the size of population of the catchment area will be applied to select the 400 respondents from the five (5) areas that will be selected, from the two study sites. For the qualitative case studies of uninterrupted direct observation, focus group discussion and in-depth exit interview of mother, a total of 50 CCGMPs will be observed, 50 leaders of these CCGMPs will be included in the focus group discussions and 50 mothers will be randomly selected for in-depth exit interviews respectively for collection of data. These qualitative case studies will include ten (10) participants from each of the five (5) areas selected from the two (2) study sites giving us 50 participants from whom to collect data, for each of the three (3) qualitative methods to be used.

2.5 Analysis and Interpretation of Data

After data collection, on a daily basis, the research team will check each script for completeness of information and for internal consistency during data processing. The set of data that will be collected using cross sectional survey, will be translated into numerical form (coded) before being entered into a computer using a software package for analysis. Two statistical package will be used to analyse the data with the help of a statistician; data from cross sectional survey will be analysed using computer software of SPSS version 22, while data from qualitative cased studies will be analysed using computer software MAX qualitative data analysis version 11.8.0.

3.0 Ethical Considerations

Even if the study involves human subjects, it is a purely non-invasive study, including only external methods of data collection which are: interviews, discussions and researcher observation. However, being research on human subjects, clearance and authority will be sought from the University of Zambia Biomedical Research Ethics Committee (UNZABREC) and data will be collected under the close supervision of the principal investigator. Confidentiality and privacy will be maintained during. In case of respondent developing anxiety or suspicion during the interview, there will be need to reaffirming the fact that the information that will be collected will be treated confidential. Only when respondent has calmed down and is still willing to continue with the interview, will the researcher resume the interview. A scientific approach will be followed and the interviewers will listen attentively and analytically to the views each interviewee will express. Questions will be repeated for clarification in case of any vagueness.

3.1 Study Limitations

Limited sample sizes may limit generalization. However, this limitation will be addressed by using multi-stage sampling, simple random sampling and triangulation [10]. Furthermore, relevant results should be obtained from the scientific sampling methods to be used, especially that triangulation will be ensured at several stages of the research process including; when formulating the theoretical frame work, concurrent application of a mixed research design with five (5) different methods used from the stage of data collection, analysis, interpretation up to the discussion of finings.

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