
UNIT 18 NUTRITION EDUCATION PROGRAMME: EVALUATION

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18.1 INTRODUCTION

So far so good. Our NEC car has been on the road for several months now and has gathered several months of experience in implementation. It is time to evaluate the journey and answer questions like “are we taking the NEC car towards its destination, the planned objectives? Could the journey of implementation been shorter, easier, less expensive? What have we learnt, so that we can plan a better journey next time?”

In fact, the time to evaluate is not at the end of the programme, but evaluation should be integrated in the whole process from start to finish, and must necessarily assess the effect of all types of interventions in a nutrition education communication strategy. In this unit, we will discuss the concept and purpose of evaluation and different types of evaluation. How to develop an evaluation system? What are the major features of an evaluation system? How to conduct dynamic and participatory evaluation of a NEC programme. These are the major aspects covered in this unit.

Objectives

After studying this unit you will be able to:

- explain the concept and purpose of evaluation,
- elaborate on different features of evaluation,
- describe different types of evaluation, and
- develop skills to conduct an evaluation.

18.2 EVALUATION-BASIC CONCEPT

In Unit 14, section 14.4, we briefly introduced you to the concept of evaluation as one of the steps in the management of public nutrition programmes. In this section, we will explain the concept of “evaluation” in greater detail especially in relation to nutrition education programmes. You already know what evaluation is? Very simply stated evaluation means “*to judge the value of something*”. Before we go further, let us first understand evaluation through scientific definitions given by many experts. Although evaluation has been defined in various ways, presented herewith are two of the most appropriate definitions in this context.

- 1) “Evaluation is a systematic and scientific process, determining the extent to which an action or set of actions were successful in the achievement of pre-determined objectives. It involves measurement of adequacy, effectiveness and efficiency of health services”.
- 2) “Evaluation is also defined as the systematic application of social research procedures for assessing the conceptualization, design, implementation, and utility of intervention programmes”.

You may note here that both the definitions stress the importance of planning the evaluation at the same time as the programme is planned and implemented. It is too late to think of evaluation at the end of programme implementation. You may recall that in Unit 14, section 14.4, we discussed about eight stage model of planning evaluation. This is the model which can be used in nutrition education programme also. Thus evaluation is an integral part of programme planning and management, whether it is a training/education programme, a specific nutrition intervention, development activities, or education of the public.

Further, you may have made note of the following two terms - effectiveness and efficiency -used in the definitions above. These terms are used very frequently in evaluation. Let us understand what they mean:

Effectiveness – It means whether or not a programme achieves its stated objectives, i.e. did it work?

Efficiency – It means the amount of effort in terms of time, manpower, resources and money required to reach the objectives-was it worth the effort?

In simple terms, therefore, *evaluation is a process which helps us to know whether the programme we planned/implemented worked or not and was it worth the effort or not.*

Having understood the concept of evaluation, we come to the next important aspect of evaluation as to why do we do evaluation. Let us study the purpose of evaluation next.

18.3 THE PURPOSE OF EVALUATION OF NEC PROGRAMME

Although we briefly discussed the purpose of evaluation in Unit 14, section 14.5, we will recapitulate it here. Evaluation is conducted because programme managers and planners must distinguish useful current programmes from ineffective and inefficient ones. They should also plan, design, and implement new efforts that effectively and efficiently have the desired impact on the target group. In order to do all this, they must obtain answers to a range of questions, such as:

Is the strategy based on priorities from a broad analysis of the nutrition situation, needs assessment and cultural and behavioural aspects?

Are the interventions selected likely to reduce significantly the nutrition problems?

Is the most appropriate target population selected?

Will the various interventions reinforce, or counteract each other?

Is the intervention being implemented in the ways envisioned?

Is it effective?

How much does it cost?

If the nutrition education programme is one of several interventions, how can its effect or impact be separated from the impact of other interventions?

Therefore, we evaluate to answer the above questions. We evaluate to aid future planning and to improve programmes, to increase our understanding of nutrition education practice and finally to add to the body of knowledge upon which our work is based. Thus, *we evaluate for the following reasons:*

Firstly, to achieve operational efficiency and to study the effects of nutrition education practice so that we can feed our findings back into practice and improve it.

Secondly, to obtain data that permit interpretation of programme effectiveness so as to obtain administrative support, community support and donor support. One reason why there is widespread skepticism regarding the cost-effectiveness and impact of NEC is that such programmes have been poorly evaluated.

Thirdly, to strengthen the scientific basis of practice of nutrition education and communication.

Box 1 highlights the reasons for evaluating nutrition education programmes.

Box 1	Reasons for Evaluating Nutrition Education Programmes
	To assess: - impact or effect, - how programmes are planned and executed, - how programme personnel perform, - how effectiveness can be improved, - the utility of a programme, and - to satisfy the programme sponsors

Thus, you would note here that evaluation is done to assess whether or not changes have taken place as a result of the programme activities. Evaluation should show whether :

The change took place or not

If the change took place, then did it happen as a **result** of the programme, and

The amount of **effort** required to produce the change was worthwhile.

You would realize that evaluating NEC programme involves making some important decisions. For example, What changes should you measure? How should you measure those changes? How can you prove that the changes took place as a result of the programme, including knowledge and behaviour changes? All these decisions should be related to the objectives of the programme.

For evaluation, we have to develop an appropriate evaluation system into our programme, so that we can conduct evaluation in a systematic and scientific way. Let us now find out about developing an evaluation system.

18.4 DEVELOPING AN EVALUATION SYSTEM FOR NEC PROGRAMME

You might recall reading in Unit 15, section 15.5, that during the conceptualization phase of NEC programme, the last step listed under the key elements of intervention strategy, was “evaluation”. So the plan for evaluation was already conceptualized before formulation and implementation of the NEC programme. Thus, you now realize that evaluation should be built into all phases of programme planning, implementation, and management right from the conceptual stage. There are two main aspects which we need to keep in mind while developing an evaluation system:

Firstly - *Goals and objectives of the programme should be linked to evaluation.* You may recall reading about setting of objectives of a NEC programme in Unit 16, Section 16.2. They should be elaborated in such a way that we are able to assess whether a change has occurred or not at the end of the programme. We need to integrate evaluation into programme planning.

Secondly, we should also *justify the use of resources or inputs* i.e. men, material money etc. through an evaluation process. We need to conduct evaluation of inputs used during the intervention process.

Thus, we will look at these two aspects i.e integrating evaluation into programme planning and input evaluation briefly. Let us first study how we can integrate evaluation into programme planning.

18.4.1 Integrating Evaluation into Programme Planning

Goals and objectives of a nutrition education programme that, we studied earlier, are identified through assessment of the existing nutrition situation, an analysis of the problems which can be solved by nutrition education, a description of the various actors and target groups and a list of the systems that can support nutrition education activities. Goals and objectives for nutrition education programmes are all based on the assumption that there is room for improvement and that nutrition education is the right strategy to be used. *Specification of goals and objectives is very important, both for an education programme itself, and for the evaluation. For the programme they give direction, expected results and time frames, and for the evaluation, they give criteria for measurements.* Programmes often suffer from poorly developed objectives, which also make evaluation difficult.

You may recall reading earlier in Unit 17 that *objectives can be classified as nutritional, educational or communication* in nature, whatever be the objectives, it is important to note, that objectives must be formulated precisely, specifying expected outcome(s) and how, where, and under what conditions results will be achieved. For educational programmes, the following elements of an objective are suggested: An objective should contain:

the expected change - outcome (e.g. behavioural, nutritional status),

the conditions under which the expected change is to take place, including, for example, the geographical area, time, target group and activities used, and

the criterion, or the extent of the expected change that will satisfy the objective. In other words, comparing change with the norms or standards or expectations laid out for the programme.

To illustrate, an objective could state that the proportion of mothers exclusively breastfeeding their children for first six months of age will increase from 16% to 20% in two years in x district as a result of NEC activities.

Sometimes we also need to evaluate certain factors affecting the implementation process. These are known as *contextual factors*. It is important to analyze contextual factors that may not have been directly addressed in the objectives but that have a bearing on implementation. These factors include the *religion, race and ethnic background* and *sex* of the target group in the community, and general *socio-economic and political issues*. Such an evaluation is known as *contextual evaluation* and can focus on factors that may impede a programme, thereby, enabling the researcher to plan strategies to cope with them.

Let us study the other aspect - evaluating inputs used in the implementation of the programme.

18.4.2 Input Evaluation: Evaluating During Intervention

Input evaluation takes a critical look at the adequacy and appropriateness of the resources being used to carry out the programme. A programme can be said to have at least four types of inputs. These are:

- the programme plan,
- the material resources, and
- human resources such as programme staff; and time, particularly that allocated for the initial phase, evaluation, feedback, and follow-up.

Many evaluations of otherwise well-designed programmes show that programme planners consistently under-estimate time and effort needed to adopt a new practice. NEC programmes, which are conceptualized and formulated well may fail at the implementation level. Hence, continuous monitoring is essential. In fact, evaluation can be planned at various levels. We studied earlier that it is ideal to plan evaluation of NEC from the conceptualization phase and thus causal analysis and formative research form part of an evaluation. Evaluation can also be undertaken during the phase of formulation. Since during this phase there is still time to reflect, not only on the relevance of intervention but also on the order in which activities should develop. We can measure the knowledge, attitudes and practices of the target population before the intervention to provide a basis for comparison afterwards. You will be surprised to know that you do not have to wait until the end of NEC programme to conduct evaluation, we can do an evaluation even during the implementation phase since there are lessons to be learnt from the experience. We will learn more on this topic in the next section. Here, let us now test our knowledge about what we have learnt so far.

Check Your Progress Exercise 1

1. What do you mean by evaluation?

.....

2. “Evaluation is an integrated part of programme planning and management”

Do you agree with this statement?

Yes

☐

No

☐

Give reasons for your answer.

.....

3. Why do we need to evaluate a nutrition education programme? 4. What are the major aspects you need to keep in mind while developing an evaluation system?
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Having learnt about the concept of evaluation and how to develop an evaluation system, we come to the next issue, that is, how to carry out the evaluation process. Can we conduct different types of evaluation, which would be an evaluation for a change in outcomes, processes and or inputs? In the next section, we will study about these aspects.

18.5 TYPES OF EVALUATION

There are different types of evaluation conducted in a programme. You can choose the type of evaluation for your programme based upon the purpose/objective of the evaluation and the questions you want to answer. For example, you may want to know whether the expected change in objectives/outcome has occurred or not. You may also want to analyze and document the entire process of implementation, review critically and learn lessons from it. There are different types of evaluation you can adopt. Let us learn about these different types of evaluation. Primarily, evaluation can be classified as:

- Process evaluation
- Summative evaluation
- Formative evaluation.

We will study about these briefly now. Let us start with process evaluation.

18.5.1 Process Evaluation

Process evaluation, as the name suggests, *is a tool for monitoring progress*. The major emphasis in process evaluation is on documenting and analyzing the way the programme works in practice, to identify and understand important influences on its operation and achievements. The primary purpose is to improve understanding of how a programme achieves what it does. It indicates whether the strategies and activities being implemented are likely to generate the expected results. Process evaluation also indicates whether the work is done on time. If the activities do not meet expectations, they may be changed or even stopped. It is much better to change a programme during implementation than await a retrospective analysis to find out where it went wrong and who was responsible for the failure - when it is too late. Examples of processes which could be evaluated would be community mobilization, women's group formed, review meetings held with counterparts etc.

There are several factors which should be considered while planning a process evaluation. These factors are: *objectives, target population, strategies and activities, scheduling, and resources* used in the programme. For NEC programmes in particular,

the behavioural objectives, primary and secondary audience groups and the types of communication strategies being used will be important considerations.

Process evaluation results have a number of uses, depending on the purpose of the evaluation, at what stage of development the programme is, and the funding agency. An important function of process evaluation is to provide information about the congruence between programme design and implementation. The results should, therefore, be fed back to project managers and staff on a continual basis. A plan for use and dissemination of process evaluation findings should be made when planning the evaluation system. It is important to present the findings in ways which correspond to the needs and competencies of the relevant stakeholders. Having looked at the process evaluation, let us look at the other type of evaluation i.e. summative evaluation.

18.5.2 Summative Evaluation

Summative evaluation is *the systematic use of research techniques to measure outcomes and overall programme effectiveness*. For example, it is not enough to know that radio programmes were broadcasted, products distributed, health workers trained, or even that programmes were listened to, understood and acted upon. The ultimate goal is not people hearing advice but taking it, changing their behaviour and ultimately improving their own and their children's health and nutrition as a result of the advice.

Summative evaluation examines questions such as: Did the programmes achieve its explicitly stated goal? What was the magnitude of the programmes impact? What were the unexpected outcomes? What parts of the programme were most, or least, successful? An example of summative evaluation would be - proportion of pregnant women who started consuming 100 iron folic acid tablets increased from 20% at base line level to 25% percent at the end of the programme in 2 years. In addition to this, summative evaluation would also examine other issues as stated above e.g. did the women have problems accessing the tablets. Did they complain of side effects? etc.

A useful evaluation looks at the process of the intervention's effects, as well as, measuring its overall impact. In order for a final health status outcome to be achieved, a series of interim steps must be successfully completed. The evaluation of these steps includes investigating whether:

- the target population had access to the channels of communication used by the programme,
- the messages actually reached the population through those channels,
- the content of the messages was learned and retained by the audience,
- members of the target audience actually changed their behaviours in response to the programme, and
- the nutritional status of the target groups improved as a result of these changes in behaviour.

Thus you may have realized that summative evaluation uses techniques to measure outcome and also overall programme effectiveness.

The third and the last type of evaluation is formative evaluation. Let us study this briefly.

18.5.3 Formative Evaluation

Formative evaluation is done *to monitor the progress during the programme implementation*. Formative evaluation, as the name suggests, typically involves gathering information during the early stages of your project or programme, with a focus on finding out whether your efforts are unfolding as planned, uncovering any obstacles,

barriers or unexpected opportunities that may have emerged and identifying mid-course adjustments and corrections which can help insure the success of your work.

Essentially, formative evaluation is a structured way to provide programme staff with additional feedback about their work. This feedback is primarily designed to fine tune the implementation of the programme, and often includes information that is purely for internal use by programme managers. An example of formative evaluation would be that, a radio programme on nutrition may be evaluated to get a feedback on how well it is received by the target audience. Planners and implementers then use the assessment to improve further on it. Formative evaluation can be *informal* or *formal*.

As elaborated by *Robert Stakes* “When the cook tastes the soup, that’s formative; when the guests taste the soup, that’s summative.” Isn’t that interesting. Programme planners may choose to incorporate any type of evaluation in the evaluation plan.

You have looked at different types of evaluation and you have also learnt how to develop an evaluation system. Let us now learn about major features of evaluation.

18.6 MAJOR FEATURES OF EVALUATION

You know that it is important for the evaluator to know what they want to evaluate and how they want to evaluate. The evaluator’s challenge is thus twofold. It is to determine:

- a) Exactly what questions to be asked during evaluation i.e. determining evaluation questions, and
- b) The strategy and methods to employ for answering these questions i.e. selecting evaluating strategy and methods

These now become the main features of the evaluation because the entire evaluation process will center around these two issues. Let us review these features in detail.

a) *Determining evaluation questions*

The evaluator’s first task is to work with project planners and implementers to understand the explicitly stated, measurable objectives of the programme. We gave you examples of several questions earlier when we discussed purpose of evaluation. The questions are established at the programmes onset, and most likely include desired level of exposure to messages, knowledge of information, first trials of new practices, adoption of behaviour, and impact on nutritional status, morbidity and mortality. In addition, however, the evaluator must consider other issues mentioned as follows:

the relative importance to project planners of different measurable goals.

For example- Is the primary goal a change in practice or nutritional status?

characteristics of the target audience and the importance of its different subgroups. For example, Were these groups more likely to learn or change or not?

expectations: For example are people expected to change immediately in response to the intervention or the change will be gradual? Is the change expected to be short term or permanent?

expectations regarding *changes in the health delivery system* itself, for example, delivery and quality of nutritional services.

Further the evaluator must take into consideration the needs of users of evaluation findings. For example, do the users primarily want to know about the impact of the intervention, or about various process indicators? Do they have questions regarding cost effectiveness and administrative efficiency?

Not all significant questions can be answered in a summative evaluation. The evaluation process is one which continues selection among alternatives, and can carefully determine priorities in terms of audiences, funds, and time constraints.

Thus the evaluator should prepare a list of questions for which he seeks an answer during an evaluation, keeping in view various issues discussed earlier. Now the evaluator has to know what strategy and methods to use to get the answer of these questions. Let us look at the strategy now.

b) *Selecting evaluation strategies to answer the questions*

Once the list of appropriate questions has been selected, the evaluator must determine which methods of data collection and analysis are appropriate for seeking answers. No one model, approach or methodology will be successful in every programme.

An effective evaluation strategy should incorporate a number of different methodologies. Distinct questions are often best answered through different designs. Distinct designs, which present alternative ways of approaching the same question, can provide particularly strong evidence of programme impact if their results are consistent.

Several research tools can be used in evaluations of communication interventions. Few examples include:

Large-scale survey conducted both before and after the intervention to measure impact regarding a group's knowledge, attitudes, and practices relating to the target nutrition problem. The "after" survey should determine access and exposure to mass media channels, messages and so on. Ideally, a group or cohort of individuals is surveyed several times to measure progress in the intervention. These surveys most commonly employ quantitative methods of data collection.

Demographic data (including socioeconomic status, age, literacy and education) help determine whether changes in practice occur only for certain groups of people.

Observational studies are useful to test the validity of self-reported data.

Qualitative research tools such as focus group discussions, semi-structured interviews and various participatory methods.

Next thing, which comes to our mind, is that which method should we use in the evaluation process. There are two types of methods which can be used in an evaluation strategy. These are *quantitative* and *qualitative* methods. Let us learn about these briefly

c) *Quantitative methods and Qualitative methods*

Quantitative methods are research methods concerned with numbers and anything that is quantifiable. They are therefore to be distinguished from qualitative methods. Counting and measuring are common forms of quantitative methods. The result of the research is a number, or a series of numbers. These are often presented in tables, graphs or other forms of statistics.

Qualitative methods involve methods of data collection and analysis which are non quantitative.

These methods are designed to help researchers understand people and the social and cultural contexts within which they live. Qualitative data also helps to understand and complement the quantitative data. Qualitative data sources include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions.

Having understood the meanings of quantitative and qualitative methods, the critical issue which arises is fitting both the methods to the purpose of the evaluation. The use of both qualitative and quantitative, and multiple methods, can strengthen the

validity of findings, if results produced by different methods are congruent and/or complement each other. Box 2 highlights the use of qualitative vs. quantitative methodologies in evaluation.

Box 2	The Use of Qualitative vs. Quantitative Methodologies in Evaluation
The use of qualitative vs. quantitative methodologies in evaluation Qualitative methodologies are useful in monitoring and process evaluation Outcome/impact evaluation is often quantitative Both types of methodologies strengthen validity of findings	

The evaluation should examine the project itself, rather than only the project's impact. It may provide an opportunity to analyze the administrative model, the extent of institutionalization achieved, and so on. The results will help planners refine basic programme designs. The evaluation may also provide an understanding of how and why specific interventions were successful, rather than just the degree to which they were. The evaluation may determine for what types of people the project worked, in what circumstances, and for how long. Such insights are invaluable for making decisions about directions of future interventions or about fundamental policies.

Another important thing, which you have to remember, is that evaluation should be participatory and all those involved in the programme should participate in the evaluation. We will now study how do we conduct a participatory evaluation.

18.7 CONDUCTING A DYNAMIC AND PARTICIPATORY EVALUATION

You must be wondering who are the people who should participate in an evaluation. The persons concerned with evaluation may be divided into four categories. These are population itself, change agents in the communication process, evaluation specialists and sponsors and government representatives. Let us study these briefly. Let us start with population.

- *Population* with whom the programme is conducted should be invited to participate in an evaluation process since the actions to be evaluated, concern them directly.
- *The change agents* in the communication process play an important role in evaluation process, as they learn from the process and can also improve their performance.
- The *evaluation specialists*, internal or external to the project provide technical expertise for the evaluation.
- Participation of *sponsors and government representatives* will allow them to see the impact of the activities which they have promoted so that they can raise more funds and consider further expansion of the programme.

When we involve community in the evaluation, it helps to create a bond of trust with the community. We can find out their feelings about the benefits and weaknesses of our activities, we can draw on their experiences and insights on what has happened. Evaluation becomes a learning process and the community is able to reflect on its experiences and plan future activities. An evaluation should ensure participation of all the people involved in the NEC programme.

There are three types of tools which have been proposed, to carry out a dynamic and participatory evaluation. These are: Causal analysis, hippopoc table and dynamic model. We will review these briefly now. Let us start with Causal analysis.

Causal analysis: We discussed causal analysis of the nutritional problems in the conceptualization phase. This can help determine the relevance of the interventions. You may recall that causal analysis consists of creating an intersectoral setting and network of factors which affect nutritional status of population. It helps to select an appropriate intervention, develop communication between intersectoral teams and for evaluating the relevance of the intervention. Causal analysis also enables us to identify confounding factors which can influence the success and failure of the intervention.

Hypothetical Inputs Process - Output Outcomes Table: Once the causal analysis is completed, a hippopoc table is constituted. In hippopoc table, as highlighted in Table 18.1, inputs, procedures, outputs and outcomes of the intervention are organized in the form of a table. The *inputs* are the elements which will be transformed into outputs by intervention. For example, money, materials and even type and number of people who carry out education activities. The *processes* are the activities undertaken to transform inputs into outputs. For example, training the educators, community mobilization etc. The *outputs* are the results of activities carried out in the intervention. They correspond to specific objectives of the intervention. They are direct effects of interventions. For example: support materials, trained educators, etc. All these should contribute to the long term objectives of any nutrition project that is improvement of nutritional status.

Table 18.1: Hippopoc Table – An example

Inputs	Processes	Outputs
Amount of funds Type, number of equipment used Type and number of people trained	Community mobilization Training Development of support materials	Number and type of groups formed Number and type of educators trained Type and number of support materials produced

Once the hippopoc table is developed, we can seek answer to following questions:

Has the nutritional problem to be solved been clearly carried out?

Has the causal analysis been carried out?

Has the formative research to understand the behaviours and the channels of communication of the target population been carried out?

Have the objectives been clearly defined in terms of modification of the nutrition related behaviours and in terms of acquisition of attitudes, knowledge and skill development?

Have the messages been clearly developed?

Has the multimedia plan taken into account the results of the formative research and the specificity of the various media in the relation to the objectives to be achieved?

Have the communication support materials been pretested before producing them on large scale?

Have the participants been trained and retrained before the start of the communication activities?

Were the activities carried out in accordance with the plan?

The outcome of the analysis is matched at the end with programme objectives to determine success?

When we seek answers to these questions, we are assessing what we did and how we did, as planned for the NEC programme.

Dynamic model

In the dynamic model, the relationship between the inputs, processes and outcomes are illustrated in the graphic form. The graph could be used by all those involved in the education programme to provide basic information in the project, to determine its successes and failures and to plan for improvement.

Thus we studied that evaluation is like an energy source that can be drawn upon, for development of participatory communication activities. Evaluation is not simply an activity external to the intervention. It is a crucial component of nutrition education.

Let us now assume that we have conducted an evaluation of the NEC programme and we find that changes have taken place in the target audience in terms of positive behaviours. We would now have a question to ask ourselves. The question is that can we say with certainty that changes in behaviours took place as a result of implementation of our programme? We would like to find an answer to this question. Let us find out about it in the coming section.

18.8 CONTRIBUTION OF NUTRITION EDUCATION PROGRAMME TO CHANGES IN BEHAVIOURS

You have implemented a NEC programme and let us assume that evaluation shows that changes in behaviours took place in target audience as expected. Now does it really matter what factors helped your programme? Perhaps not. But if your programme was an experimental pilot project testing out a new approach that you want to repeat elsewhere, you would have to make sure that the improvements occurred because of the new methods and not for any other reason. If the objectives have been clearly defined at the outset, it is not usually difficult to show that change has taken place in your community. However, it is much more difficult to show that it took place because of your own efforts and not because of another reason. There are two ways of showing that change was caused by your own efforts. These methods are 1) by using a control group, and 2) indirect method without using a control group for comparison. This is called proving 'causality'. Let us study these methods in detail. Let us study the first method first.

1. *Using control group*: In the control group method, we can set up two test groups. One test group that receives the nutrition education and the other group as a 'control' which does not receive the education. The two groups should be as close as possible in age, education, income and other factors likely to influence impact. If the group that received the education achieves a better performance than the control group, this will provide a strong evidence for the success of the communication process. Figure 18.1 depicts the process of comparing changes in test group and control group, if a control group was set up in the beginning of the programme.

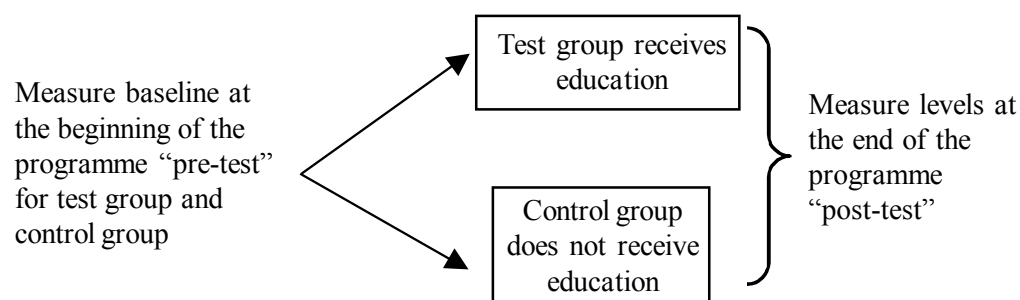


Figure 18.1: Comparison between test group and control group

Thus, using a control group method, we can assess the change *before* and *after* the intervention. If the test group shows a positive change in behaviour and the control group does not show any change, then we can say that the change in the test group occurred as a result of our interventions.

Let us look at the other method i.e. indirect method.

2. *Indirect method without controls*: If it is not possible to set up a control group, we will have to use an indirect method for excluding other reasons for any changes. We would have to carefully look at other possible explanations for the changes that took place. We could interview in the community and ask them why they changed their behaviour – was it because of the education programme or were there other reasons? Figure 18.2 depicts the process for determining changes without the use of control group.

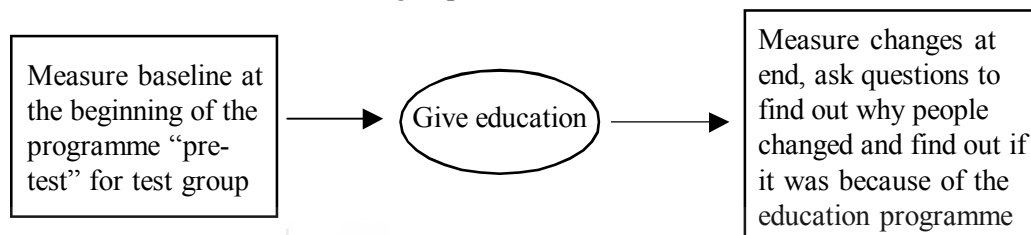


Figure 18.2: Measuring change without the control group

We can note from the Figure 18.2, that we conduct a baseline survey in the beginning of the programme to determine the current behaviours. We provide education and then conduct a survey again to determine why people changed behaviours and if it was as a result of our interventions.

So you saw how using the two methods, we can assess that changes occurred exclusively due to the nutrition education programme. We have now studied all aspects of an evaluation process. You can now develop an evaluation system, decide what methods to use and conduct an evaluation of the nutrition education programme. We will now recapitulate what we studied and review the main points, which should be considered while planning an evaluation system in a NEC programme. These are as follows:

- i) Integrate evaluation in the programme from the planning phase.
- ii) Clarify the purpose of the evaluation. Prepare a set of realistic, achievable and measurable indicators for success.
- iii) Develop an evaluation system, which takes account of all phases of the nutrition education communication project.
- iv) Whenever possible, set up control groups who do not receive the education. If controls are not possible, collect data that will help to show that it was the programmes effort that led to improvements.
- v) Decide if the evaluation should be internal or external, or both.
- vi) When evaluating inputs, make sure that programme objectives are properly specified and that indicators are measurable and that the activities are relevant and feasible.
- vii) Use multiple methods (triangulation) in data collection and analyses. This will strengthen the validity of findings if the results produced by different methods are congruent.
- (viii) In analyses, be careful to control for extraneous confounding factors and bias.
- (ix) Don't limit to finding out if you have reached your objectives – look out for any unplanned benefits or unexpected problems.

- (x) Learn from your failures as well as successes. Find out why programmes succeeded or failed and what lessons can be drawn for the future.
- (xi) Allocate adequate time to nutrition education programmes, with the timing of the evaluation clearly identified.

Thus, we learnt that it is very important to conduct evaluation of a NEC programme. We must incorporate evaluation plan into NEC programme right from the conceptualization phase. In fact, we can conduct evaluation during any phase of the NEC programme. The reason why so many well planned NEC fail at the implementation level is because they have not in-built the evaluation plan into them. If we include an evaluation plan in the NEC programme, we would be more likely to achieve success in NEC programme. This will also give more credibility to nutrition education practice and the programmes would not be seen with skepticism.

With the discussion above we end our study of evaluation.

Check Your Progress Exercise 2

1. What is the ultimate goal of nutrition education communication?
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.....
2. Explain these terms briefly:
 - a. Process evaluation
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 - b. Summative evaluation
.....
.....
3. What are the main features of evaluation?
.....
.....
.....
4. How will you show that change took place because of the education programme?
.....
.....
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18.9 LET US SUM UP

In this unit we learnt about the concept and purpose of evaluation. Evaluation is an integral part of programme planning and management and should be planned from the beginning of the nutrition education programme. However, evaluation can be conducted during any phase of the nutrition education programme. Evaluation involves showing whether; the change has taken place or not, if the change took place, then did it happen as a result of the programme and if the amount of effort required to produce the change was worthwhile. We learnt about how to develop an evaluation system and

different types of evaluation. Different types of evaluation are process evaluation, summative evaluation and formative evaluation. We studied about two features of evaluation. These are determining evaluation questions and selecting evaluation strategies to answer these questions. We also learnt as to how we conduct a dynamic and participatory evaluation. We concluded the section by discussing about the methods used to assess if the changes in behaviour in a nutrition education programme took place as a result of our efforts.

18.10 GLOSSARY

- Pilot project** : Activity planned as a test or trial.
- Control group** : A specific group designated in a research study where participants are used as a standard for comparison and do not receive any treatment.
- Semi structured** : Interviews conducted with a fairly open framework which allow for focused, conversational, two way communications. These are used to give as well as to receive information.

18.11 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. In simple terms, evaluation means to judge the value of something. Evaluation is a systematic and scientific process, determining the extent to which an action or set of actions were successful in the achievement of pre-determined objectives. Evaluation is also defined as the systematic application of social research procedures for assessing the conceptualization, design, implementation, and utility of intervention programmes.
2. Yes. Evaluation is an integral part of programme planning and management, because it involves measurement of adequacy, effectiveness and efficiency.
3. We need to evaluate nutrition education programmes to aid future planning and to improve programmes, to increase our understanding of nutrition education practice, to add to the body of knowledge upon which our work is based. We evaluate to achieve operational efficiency and, related to this, to obtain data that permit interpretation of programme effectiveness so as to obtain administrative support, community support and donor support.
4. There are two main aspects which we need to keep in mind while developing an evaluation system. Firstly goals and objectives of the programme should be linked to evaluation. Secondly, we should also justify the use of resources or inputs i.e. men, material money etc. through an evaluation process.

Check Your Progress Exercise 2

1. The ultimate goal of NEC programme is not people hearing advice but taking it, changing their behaviour and ultimately improving their own and their children's health and nutrition as a result of the advice.
2. a. Process evaluation is a tool for monitoring progress. It indicates whether the strategies and activities being implemented are likely to generate the expected results. Process evaluation also indicates whether the work is done on time. If the activities do not meet expectations, they may be changed or even stopped.

- b. Summative evaluation is the systematic use of research techniques to measure outcomes and overall programme effectiveness.
- 3. Main features of evaluation system are: a) Determining evaluation questions. b) Selecting evaluation strategies to answer these questions. An effective evaluation strategy should incorporate a number of different methodologies.
- 4. Changes taking place due to the efforts of the programme can be assessed by two methods. 1) Using controls: one can set up another group as a 'control' who does not receive the education and assess. 2) Indirect method without controls: We could interview in the community and ask them why they changed their behaviour – was it because of the education programme or were there other reasons?



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Annexure - 1A

Guidelines for conducting a diet survey using 24-hour recall method

First collect background information i.e. family particulars regarding age, sex, physiological status and occupational status of the members.

Collect information regarding the meal pattern i.e. the type of preparation made for breakfast, lunch, tea, dinner during the previous day.

- Note down the name of the preparations in local term.
- Note down raw ingredients used in the preparation
- Record amount of each raw ingredient in terms of actual weight if known or approximate weight in terms of local measures or with the help of standard measures as indicated below:

Food stuff	Local measure	Weight in gm
1) Bengal gram dal	1 pav	250
2) Onion	4 small ones	120
3) Cauliflower	3 pav	750
4) Oil	3 tsp	15
5) Spices (Corriander powder)	1 tsp	5 mg

Record the amount of cooked preparation in terms of measuring cup. If the housewife is unable to give the amount in terms of cup, then ask them to fill the vessel used are the preparation with water upto the same level (approximate) as for the preparation. Then measure this volume for the total cooked amount.

Note the amount of food or portion size served to each member from each of the preparations made in the family.

- Note the amount in terms of cups, for each individual.
- If flesh foods (such as mutton, fish etc.) is considered, note the total amount cooked in terms of number of pieces and the number given to each individual.
- In case of oil, sugar note the intake in terms of standardised spoons and ladles.
- If the individual is an infant, make a note of breast feeding practices and/or supplementary foods given.

After collecting this basic information, calculate the intake of the individual in terms of raw amount using the following formulae.

$$\text{Individual intake in terms of raw amounts of food} = \frac{\text{Raw quantity (g) of each preparation used by the family}}{\text{Total cooked amount (volume) of each preparation}} \times \text{Individual Intake}$$

For example 1/2 kg (i.e. 500 g) of raw rice was cooked (1400 ml water) for the family. The total weight of the cooked rice was estimated to be about 2 kg (2000 gm). Out of this preparation an individual consumed say 100 g (measured with the standard cup), then the amount of raw rice eaten by the individual can be worked out as under:

$$\text{Amount of rice taken by the individual} = \frac{500}{2000} \times 100 = 25 \text{ g.}$$

Once the amount of raw food is known, we can refer to the Food Composition Table [given in the Practical Manual-I] and estimate the nutrient content of the food consumed by the individual.

Assessment of dietary intake of an individual (child) in the family using 24-hour recall method of Diet Survey

- 1) Identification particulars:
 Date
 Place (Town/City/Village) District Block St
 Name of child
 Name of Father/Guardian Age (yrs-mths) Sex
 Address
- 2) Socio-economic details of family
 Father Mother Other sources of income
 Occupation
 Total income (Rs./ps/month)

Age group (yrs.)

Family composition :

0-1 1-3 3-5 5-7 7-9 9-12 12-21 21

Total

Male

Female

- 3) Breastfeeding status of the child: EBF/PBF/Weaned
 Relationship and age of the person Relationship Age(yrs)
 feeding the child when the mother
 is away for work:

- 4) Dietary intake:

Meal pattern	Amounts used by the family previous day				Intake of an individual (child)	
	Name of Preparation	Ingre- dients used	Raw amount g/ml	Cooked quantity	Cooked quantity g/ml	Raw equivalents g/ml
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Early morning						
Breakfast						
Mid-morning						
Lunch						
Tea & Snacks						
Dinner						
Others						
a) (Meals/snacks taken outside home)						
b) Supplements from any, of the feedings programmes, if any (specify)						

Annexure 2

FOOD FREQUENCY QUESTIONNAIRE

Schedule for assessment of Qualitative dietary pattern of family

1. Identification particulars :

S. No.

Date :

Name of the village/

Block :

Dist :

State :

Urban area

Name of the Respondent :

Address :

2. Socio-economic status of family :

Occupation of the head of the family :

Family size and Composition	Age groups (yrs)						No. of earning members	Total family income Rs/p.m
	0-1	1-5	5-12	12-18	Adults	Total		
Sex :								
Males								
Females								
Total								
Educational level :								

Type of family : Nuclear/Extended/Joint

Physiological status of woman : Pregnent/Lactating/Non-pregnant & Non-lactating

Number of absentees/guests/servants/pots in the family :

3. Dietary pattern of the Family :

	DIETARY INFORMATION									
	Frequency of usage of foodstuffs						Sources of getting food stuffs*	Raw quantity per (g/ml)	cost kg. Rs. Ps.	Name preparation
	Daily	3/wk	2/wk	1/wk	1/mth	Season in which used				
1. CEREALS: Rice Wheat Jowar Ragi Others										
2. PULSES/ LEGUMES:										

	DIETARY INFORMATION									
	Daily	3/wk	2/wk	1/wk	1/mth	Season in which used	Sources of getting food stuffs*	Raw quantity per (g/ml)	cost kg. Rs. Ps.	Name preparation
3. GREEN LEAFY VEGETABLES: Spinach Amaranth Cabbage Kethi Others										
4. Radish Carrots										
5. OTHERS VEGETABLES										
6. FRUITS :										
7. MILK AND MILK PRODUCTS										
8. SUGAR AND JAGGERY:										
9. OILS & FATS										
10. FLESH FOODS : Meat Beef Poultry Fish : Fresh DryEGGS										
11. MISCELLANEOUS FOODS										
12. LESS FAMILIAR FOODS										

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANM	Auxillary Nurse Midwife
AG	Adoloscent Girl
AAY	Antodaya Anna Yojana
AWW	Anganwadi Worker
AWC	Anganwadi Centre
APL	Above Poverty Line
BOAA	Beta-oxalyl Amino Alanine
BMI	Body Mass Index
BPL	Below Poverty Line
CMO	Chief Medical Officer
CNS	Central nervous System
CED	Chronic energy Dificiency
CU	Consumption Unit
CDPO	Child Development Progress Officers
CBC	Communication for Behaviour Change
CIP	Central Issue Price
CSSM	Child Survival and Safe Motherhood
DG	Director General
DTP	Diphtheria, Tetanus, Pertussis
FAO	Food and Agricultural Organization
FCI	Food Corporation of India
FAD	Flavin Adenine Dinucleotide
FMN	Flavin Mononucloeotide
FPS	Fair Price Shop
GNP	Gross National Product
GDP	Gross Domestic Product
GOI	Government of India
HIV	Human Immunodeficiency Virus
HDI	Human Development Index
HCC	Hydroxy Cholecalcieferol
ICDS	Integrated Child Development Scheme
IAP	Indian Academy Paediatrics
IU	International Units
ICAR	Indian Council of Agriculture Research
IDA	Iron Deficiency Anaemia
IDD	Iodine Deficiency Disorders
IMR	Infant Mortality Rate
IRDp	Integrated Rural Development Programme
IFA	Iron and Folic Acid
IEC	Information, Education, Communication
IU	International Unit
IUD	Intrauterine Device
IEC	Information Education and Communication
KSY	Kishori Shakti Yojana
L.D.C.	Lower Divisional Clerk
LHV	Lady Health Visitor

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MUAC	Mid-Upper Arm Circumference
MPR	Monthly Progress Reporting
MMR	Measles Mumps Rubella
NCHS	National Council for Health Statistics
NNMB	National Nutrition Monitoring Bureau
NIN	National Institute of Nutrition
NNACP	National Nutritional Anaemia Control Program
NMMP	National Midday Meals Program
NRR	Net Reproduction Rate
NFHS	National Family Health Survey
NREP	National Rural Employment Programme
NSSO	National Sample Survey Organization
NEC	Nutritional Education Communication
NE	Nutrition Education
NPAN	National Plan of Action on Nutrition
NNP	National Nutrition Policy
NFHS	National Family Health Survey
NGCP	National Goitre Control Programme
NIDDCP	National Iodine Deficiency Disorder Control Programme
NFFWP	National Food for Work Programme
NOAPS	National Old Age Pension Scheme
NICD	National Institute of Communicable Diseases
NSPE	National Support to Primary Education Programme
OPV	Oral Polio Vaccine
PHC	Primary Health Centre
PDS	Public Distribution System
PEM	Protein Energy Malnutrition
PMGY	Pradhan Mantri Gramodya Yojana
PRI	Panchayati Raj Institution
QALY	Quality Adjusted Life Index
RDA	Recommended Dietary Allowances
RFA	Recommended Food Allowances
SC	Sub Centre
SD	Standard Deviation
SM	Social Marketing
SFB	Soya Fortified Bulgur
SGRY	Sampoorna Grameen Rozgar Yojana
SGSY	Swarnajayanthi Gram Swarozgar Yojana
SNP	Special Nutrition Programme
TBA	Trained Birth Attendant
T.B	Tuberculosis
TGR	Total Goitre Rate
TIP	Trials for Improved Practice
TT	Tetanus Toxoid
TDPS	Targeted Public Distribution Scheme
U.D.C.	Upper Divisional Clerk
UNICEF	United National Children's Education Fund
UN	United Nations
U5MR	Under 5 Mortality Rate
UNDP	United Nations Development Programme
UNICEF	United Nation International Children Education Fund
VAD	Vitamin A Deficiency
WHO	World Health Organisation

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