

# Evaluation of Nutrition Education Programmes:

## ***Definition of Evaluation:***

*The term- "Evaluation" is the systematic application of social research procedures for assessing the conceptualisation, design, implementation, and utility of social intervention programmes.*

Evaluation is also an integrated part of programme planning and management, whether it is a training/education programme, a specific nutrition intervention, development activities, or education of the public, objects, persons, process, and achievements etc.

*Thus the evaluation of a programme is a systematic collection and delineation and use of information to judge the correctness of the situation analysis, critically assess the resources and strategies selected, to provide feedback on the process of implementation and to measure the effectiveness and the impact of an action programme.*

Evaluation is the process of determining the extent to which one is able to attain his/her objectives. All programmes must have an inbuilt system of evaluation to know how well the work is done. It should be a continuous process not only to measure the end result but also to ensure that all the steps are correctly followed.

Evaluation is seen as an essential management tool for all community nutrition activities, including nutrition education of the public. It includes a range of methodologies from medicine and social science to those specific to nutrition. All definitions stress the importance of planning the evaluation at the same time as the programme to be evaluated.

Evaluation may be formal/ informal, depending on the importance of programme, availability of trained non-power, funds, facilities and time.

***Nutrition and Health Education***~*Nutrition Education is a combination of education and techniques designed to facilitate the voluntary adoption of food choices and alternative food and nutrition connected behaviour for the betterment and maintenance of the health condition of the individual.*

***Program planning***~ *is the process by which a program is conceived and brought to fruition. Program planning involves multiple steps including the identification of a problem, selection of desired outcomes, and assessment of available resources, implementation, and evaluation of the program.*

Programme managers and planners and policy makers must, therefore, choose useful current programmes efficiently, to have the desired impact on the target group. Evaluation activities range from simple counting of events, to complex qualitative and quantitative analysis. Evaluation theory and procedures are basically the same in various interventions such as health, education, welfare, and other human service policies and programmes.

## **Examples of Evaluation program: (In Nutrition & Health Sector)**

### *Example No: 1*

Nutrition & Health education has become increasingly prominent in schools' programmes worldwide, either as part of dedicated courses or as skills-based programmes. There is evidence that with current changing lifestyle, young students develop risk factors for many diseases rapidly whereas obesity is becoming a major common public health issue for children. Patterns of eating are changing with a strong reliance on frequent snacking and consumption of junk foods. A study had been conducted therefore. The aim of the study was the promotion and evaluation of nutrition education programme at schools for students inducing positive changes in eating habits and increase student's knowledge about healthy eating. Nutritional education program consists of several sessions over weeks, and included also the application of a food paired validated questionnaire to measure the preference, behaviour and knowledge of students regarding healthy eating. A comparative and quantitative study was developed for that. Data were collected and analysed. Significant differences were found in the intervention student's preference. Following that the Nutrition Education Programme was seen as an improvement in preferences for healthier food and eating behaviour.

### *Example No: 2*

In India Protein Energy Malnutrition is a very common problem prevailing in pre-schooler and young school aged children. Therefore various central and state govt. aided programmes are running though out the country. Assessment or evaluation of Mid-day meal programme or school lunch programme thus impactful as most of the children should get  $\frac{1}{2}$  of their protein requirement and  $\frac{1}{4}$ <sup>th</sup> of their total energy requirement/day (ICMR- RDA) through this meal.

### *Example No: 3*

Assessment of coverage and utilization of fortified food (fortification of staple foods) used as vehicle to assess the adequacy of fortification with mandated levels, equity of coverage is to identifying and classifying potentially at-risk population subgroups with the use of diverse measures of vulnerability, associated with low micronutrient intake, poor nutritional level, or health outcomes in low-resource settings e.g., poverty, poor dietary diversity among women, and rural residence. From last 25 years, various surveys are conducted to assess the coverage of large-scale fortification programs, including those for oil, common salt, iron fortified breads, wheat flour, and maize flour, in our country. The results focuses on 2 aspects of coverage, the first being the food vehicle itself, and the second being equity of coverage in the population. 3rd levels of coverage are also being assessed, i.e., whether the respondent consumes the food vehicle in the home, whether the food vehicle he or she consumes are fortifiable (i.e., industrially processed), and whether the food vehicle he or she consumes are fortified (i.e., actually contained nutrient based on analysed samples). The quantitative assessment of nutrient content in the food vehicle also permitted comparison with mandated levels to assess the proportion of food that was adequately fortified.

*Example No: 4:* Assessment of supplementary feeding programmes for children up to 5 years age and pregnant and lactating women at ICDS centres.

## The purpose of Evaluation programme:

Evaluation of nutrition and health education programmes are undertaken for several reasons: to judge how-

- The nutrition education programmes are planned and executed
- The programme personnel have performed
- To increase the effectiveness of programme management and administration
- To assess the utility of new programmes; and to satisfy programme sponsors

Moreover Society and Govt. which finally pays the bill for nutrition education activities, has a right to know how resources have been used and the final impact of educational programmes.

### Figure 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,
- To satisfy the programme sponsors.

## The Functions of Evaluation programme:

- Evaluation of nutrition education programmes includes not only collection of qualitative and quantitative data, but also their analysis and interpretation for the purpose of making judgement and decisions. In this context, evaluation is seen to have two main functions: *formative* and *summative*.
- Formative evaluation is used to improve and develop programme activities as they are carried out, and is therefore continuous.
- Summative evaluation measures the outcome of an activity or set of activities. It is also used to satisfy the accountability requirements of programme sponsors.
- By providing feedback or involving people in evaluation activities, programme beneficiaries can be motivated about its usefulness.
- Evaluation may have psychological or socio-political functions as it is used to increase the awareness of educational activities or promote public relations.
- Another function is to facilitate supervision. In an organisation responsible for a nutrition education programme, it is the responsibility of a manager to evaluate personnel and programme activities under her or his responsibility. This may be referred to as the administrative function of evaluation.

## Figure 2: Functions of Evaluation programme

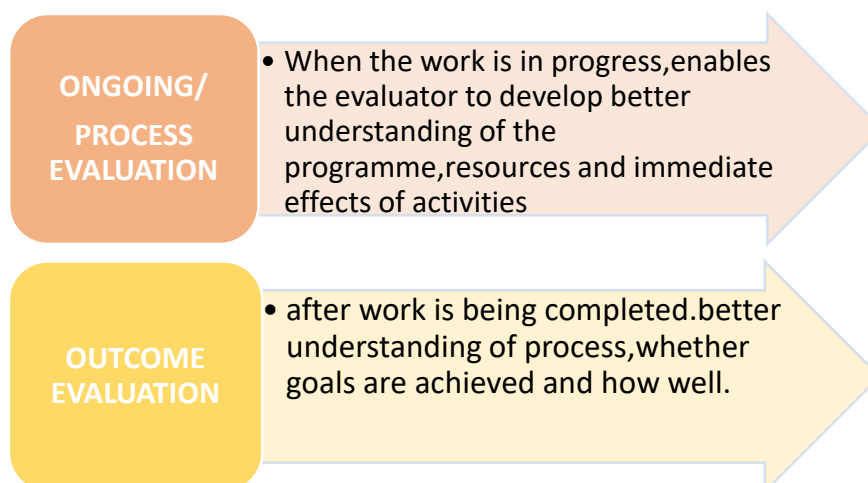
- Improve and develop activities of programmes as they are carried out
- Measure outcome
- Accountability
- Provide feedback to or involve beneficiaries in evaluation activities
- Create or increase the awareness of educational activities
- Promote public relations
- Evaluate programme personnel
- Facilitate supervision

## Advantages of Evaluation programme According to Kelsey & Hearnly 1967

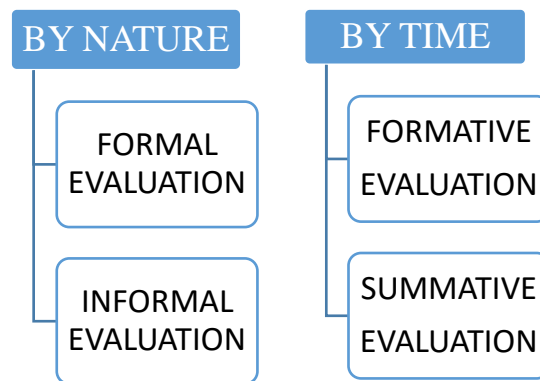
- It helps to establish a benchmark, the situation at the start of programme.
- It shows how far our plans have progressed.
- It shows whether we are proceeding into right direction.
- It may point out omissions, recommend changes and suggest new directions
- It indicates effectiveness of the programme.
- It helps to locate wrong/weak points so that one can rectify the exact problem and it will not be repeated.
- It also locates the strong points in a programme.
- Improves our skills in working with people.
- It helps to determine priorities for activities in the plan of work.
- It brings confidence & satisfaction to work.

*Example:* Evaluation can be done on the targets in respect of income and employment generation & availability of protein food for young children in a family which can be done under nutrition education evaluation programme. This kind of evaluation indicates the degree of short falls and by pin-pointing it, it should be either removed or rectified to eradicate the deficiencies.

## Level of Evaluation Process:



## Types of Evaluation Process: ~



*FORMATIVE EVALUATION:* Takes place during the development of a concept or proposal with the intention of improving value or effectiveness of the proposal.

*SUMMATIVE EVALUATION:* Drawing lesson from a complete action/project at the later point in time / circumstances.

## An evaluator and Types: ~

- An internal evaluator is usually a part of the programme concerned and reports directly to its managers.
- An External evaluators are not directly involved or employed in the programmes they examine.
- Professional evaluators associated with training and expertise, not a value judgement of the quality of an evaluation. They have a better understanding of a programme evaluation.
- An amateur evaluator usually focuses on other topics, and evaluation is only a part of her or his job, normally less skilled in evaluation than the professional.

## Skills Needed in Evaluation Process

Nutrition is a field which is cross- or inter-disciplinary in nature. While evaluating, borrowing of methodologies from many disciplines has been extensive like nutritionists, physicians, sociologists, agronomists and other groups. Evaluators use a range of approaches, such as large-scale, randomised field experiments, time-series analysis, qualitative field methods, quantitative cross-sectional studies, rapid appraisal methods, focused group discussions, and participant observation.

An evaluator has an important role in assessing the correctness of problem identification (context evaluation). Skills are therefore needed in diagnostic procedures for defining the nature, size, and distribution of the nutrition problem. This may include analysis of existing data to assess or provide a baseline, rapid appraisals, qualitative needs assessment, forecasting needs, estimating nutrition parameters, estimating nutrition/disease-risk behaviours, and

assessing the selection of targets (incidence/prevalence measurements, identification of population at risk, etc.) Furthermore, skills are also needed in using indicators to identify trends, measure programme coverage, identify effects and impact, assess biases and confounding factors, and disseminate evaluation results.

The best method or set of methods for answering the questions that address the objectives of the evaluation are-quantitative or qualitative methods, questionnaires, guides, general interviews, focused groups, key informant interviews, and participant observation.

## **Components in an evaluation system**

### **1. Context evaluation**

Context evaluation ensures that past experience is brought into the process of planning. It focuses on the initial decisions in the nutrition education programme. Usually, most of the information needed has already been collected during the situation analysis. If the available information is not sufficient, data from a sample or pilot programme may be collected to give better understanding of the problem. Context evaluation is normally carried out to refine objectives and activities, and ensure that they are realistic and relevant to the problems addressed in the nutrition education programme.

Context evaluation is also used to analyse 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.

In nutrition education programmes it is essential for programme planners to understand how different target populations perceive reality, how they use and perceive symbols and colours (which may be used by the education programme), and how a nutrition education message would be received, understood and possibly acted upon by the target population.

### **2. Input evaluation**

Input evaluation of a nutrition education programme is an important part of the preparation for implementation of the programme. It takes a critical look at the adequacy and appropriateness of the resources available to carry out the programme. A programme can be said to have at least four types of inputs:

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

**3. Process evaluation-** Process evaluation is a tool for monitoring progress. It indicates, while the strategies and activities are implemented, whether they are likely to generate the expected results. Process evaluation should also indicate whether the work is done on time. If the activities do not meet expectations, they may be changed or even stopped. The nature of the process evaluation depends on the problem and the programme involved. Some problems and programmes demand daily evaluation or immediate data collection, while others need only occasional checking. Several factors should be considered when planning a process evaluation, such as: objectives, target population, strategies and activities, scheduling, actors, and resources.

#### 4. Outcome or impact evaluation

The gross outcome measure in a nutrition education programme might be defined as any change in the diet of the participants compared to the diet before the programme started .example-the difference between pre- and post-programme values on selected measures.

The *Net outcomes* are more difficult to measure. In assessment of net outcomes in a nutrition education programme, we try to measure for example the dietary changes which are caused by the intervention.

In impact assessment we are primarily concerned with the net outcome.

#### Comparison Between Qualitative & Quantitative Evaluation Methods:~

1. While Impact or outcome evaluation is often quantitative, process evaluation and monitoring also use qualitative information.
2. Qualitative evaluators often tend to be oriented toward making a programme work better by feeding information to its managers (formative evaluation). In contrast, quantitatively-oriented evaluators view the field as one primarily concerned with impact or outcome evaluation (summative evaluation).
3. Qualitative approaches can play critical roles in programme design and are important means of monitoring programmes (process evaluation). In contrast, quantitative approaches are much more appropriate in estimates of net impact, as well as in assessments of the efficiency of programme efforts.
4. Qualitative procedures are relatively difficult and expensive to use if the evaluation depends entirely on this.

#### The use of qualitative vs. quantitative methodologies in evaluation

- Both types of methodologies are important
- Qualitative methodologies are useful in monitoring and process evaluation
- Outcome/impact evaluation is often quantitative
- Use of both types of methodologies strengthen validity of findings



## **Developing an Evaluation system:- (Steps of Evaluation process: )**

A common approach to evaluating an educational programme is often called a systematic approach (Rossi & Freeman, 1993). According to this approach, evaluation should be built into all phases of programme planning, implementation, and management.

1. Integrating evaluation into programme planning -Assessment of the situation can be considered as a part of an evaluation system is that is evaluation begins with a clear definition of a nutrition education programme's goals and objectives.

### 2. Goals and objectives - linking programmes and evaluation

Evaluator needs to decide on the purpose of evaluation and what to evaluate. Goals and objectives of a nutrition education programme are based on nutritional needs. These are identified through assessment of the nutrition situation.

Example, in an overview of regional or national plans for food and nutrition,

- A profile of diseases and problems related to food and nutrition;
- The problems which can be solved by nutrition education;
- The factors that contribute to nutrition-related problems
- The level at which they operate (national, regional, local, household and individual)
- Description of the various target groups
- List of the systems that can support nutrition education activities

From this informations, the goals and measurable objectives can be specified. Goals are generally broad, abstract, idealised statements about desired long-term expectations. For evaluation purposes, goals must lead to operationalization of the desired outcome. An objective should contain the followings:~

- The expected change - outcome* (e.g. behavioural, nutritional status);
- The conditions* under which the expected change is to take place, for example, the geographical area, time, target group and activities used.
- The criterion*, or the extent of the expected change that will satisfy the objective.

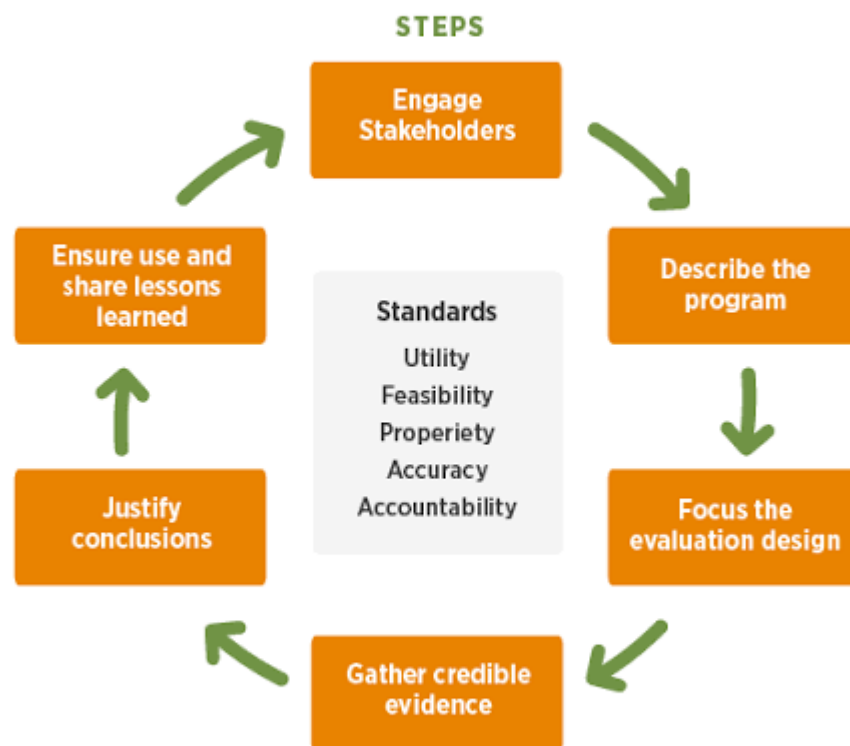
3. Sampling- Evaluator needs to decide the sample and sampling method which will furnish the desired informations.

4. Collection of Informations- Data collected for evaluation may be qualitative or quantitative, more applicable for statistical analysis which gives in-depth analysis of situations. For data collection, the evaluator must be trained enough with the procedure and data collection devices, methods like observation, interview, making questionnaire.

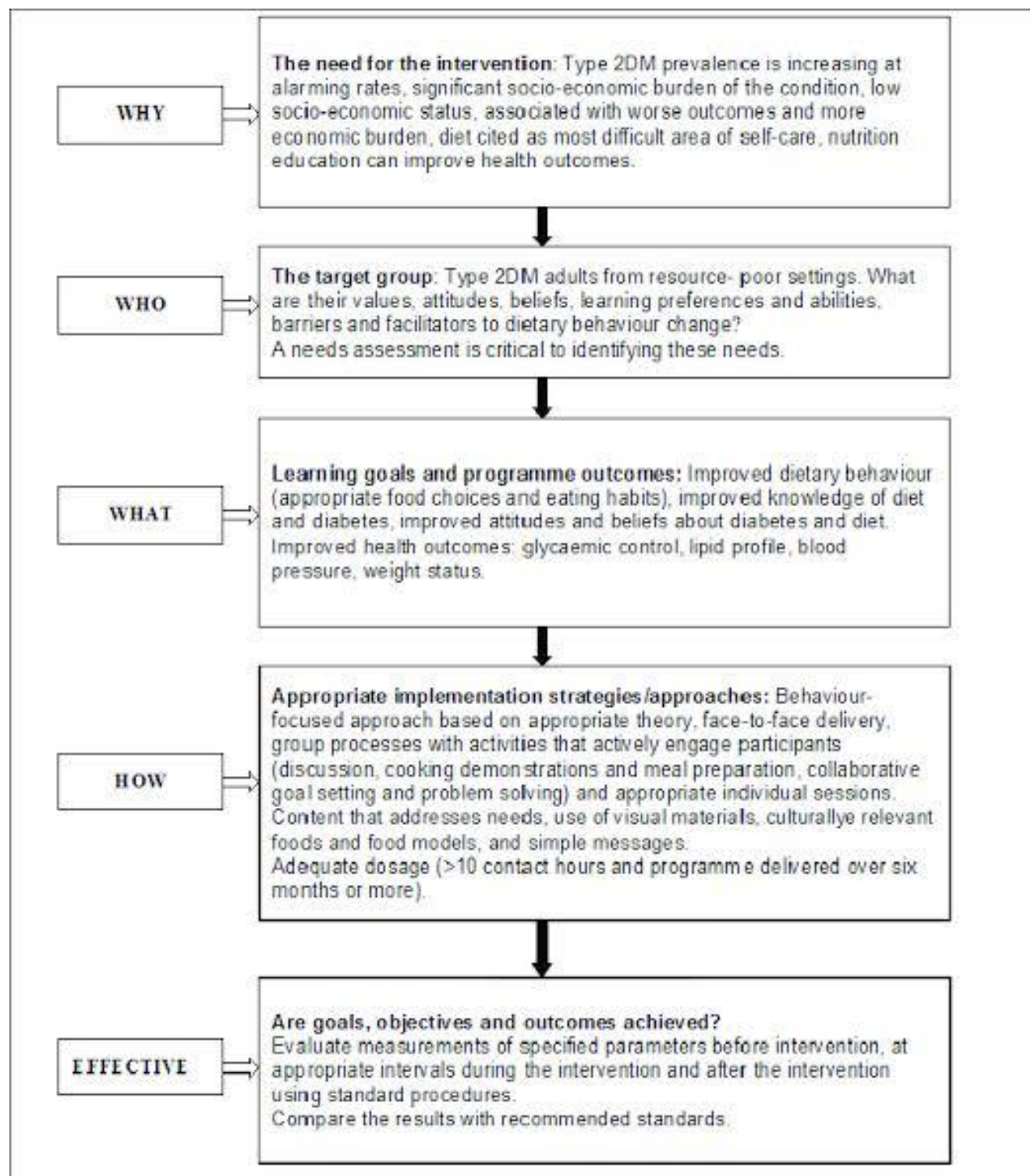


5. Analysis of Data- data need to be analysed by computer or similar devices and interpreted.
6. Making judgements-judgement should be made with reference with the standard on set point of evaluation outcome to draw some unbiased and valid conclusion.
7. Look for significant changes-changes in knowledge, attitude, skill, understanding, and adaptation, behaviour of people, productivity, production system, cost, and budget, return generation of the programme or enterprise.
8. Report writing-an apt and concise report should be prepared by highlighting the major findings where implications, recommendations with specific action that is taken already, at different level should be clearly stated.

## Strategic Program Evaluation Process



Adapted from Centers for Disease Control and Prevention. Framework for program evaluation in public health. MMWR 1999;48(No. RR-11); Joint Committee on Standards for Educational Evaluation.



## Points to be kept in mind while Evaluating a Programme: ~

1. Supervision-indirect control method which provided information for development of programme.
2. Budgeting of programme-performance represents the purpose and objective for which funds are required, the cost of programme, for achieving these objectives and work performed under each programme.
3. Reporting-A report is a formal record of activities of a programme, periodical reporting, annual reporting of a programme, provides feedback information so that it could help the future programme.
4. Self-discipline-the concept of control also implies some self-discipline in the behaviour pattern of extension personnel, may also help in achieving better control on the whole extension and nutrition education or similar kind of programmes.
5. Controlling Bias- any kind of biasness should be controlled and checked while evaluating a programme.
  - Selection bias: This type of bias results from the way subjects are selected for the study. The relation between risk factors and outcome is different for those who participate and those who would theoretically be eligible for study, but do not participate. In programmes where people are invited to participate, the problem of *self-referral* bias appears. Another source of selection bias derives from refusal, non-response or drop-outs among the target group. Subjects who leave a programme may be different from those who remain. The consequence is often that those who stay with a programme to its end are those who may have needed the programme least.
  - Information bias: - When people are interviewed about dietary intake they tend to reply according to what they consider is healthy, or give the answer they think the interviewer wants.

*example*, a person in a control group is consistently under-reporting her/his food intake because he or she wants to be a beneficiary of a nutrition intervention programme, he or she may be wrongly classified into a group with low energy intake, or low access to food. This may overestimate the effect of a programme.

A major problem is the lack of valid practical methods to measure the usual dietary intake. Thus, a 24-hour diet recall cannot be used to identify individuals whose intakes are consistently high or low except perhaps in communities where dietary patterns are extremely monotonous. In order to improve the validity and reliability, combined methods are therefore often used Secondly, all individuals are exposed to hypothesised some dietary factors such as fat, vitamins, the vitamins A and C and other antioxidants, and non-nutrients including those of toxic nature. In periods, the exposure for the same individual might be high or low (like high intake of fruits and vegetables in seasons of high availability, but low intake of the same foods

during off-season). This makes it difficult to classify a person as having a consistently high or low nutrient intake.

- Underlying factors influencing diet

Example-the change in smoking habits throughout the world.

A number of studies have demonstrated that smokers eat differently from non-smokers. The pattern is similar among men and women of various ages, and in different countries. It may be argued that smokers purchase different foods compared to non-smokers because cigarettes are relatively expensive and so compete with food expenditures. If food access were the same, one might assume that there would be no difference in dietary intake. However, that in a situation where smokers and non-smokers have the same food access, the smokers have a more unhealthy diet than non-smokers. The changing pattern of smoking will therefore affect people's food habits in particular in urban areas, and thus their nutrition situation. This shows that controlling for smoking is important in any evaluation which compares dietary intake in different groups exposed to nutrition education.