ARTICULOS GENERALES

NON-FORMAL NUTRITION/EDUCATION FOR RURAL DEVELOPMENT IN LATIN AMERICA

Jean Audrey Wight

Nutrition Departament University of North Carolina-Chapel Hill

SUMMARY

Innovative health and nutrition messages arising from and by rural groups in developing countries, can contribute to their improved nutritional status.

INTRODUCTION

Non-formal rural, community focused, innovative nutrition and health instructional modules can contribute to accelerating social and economic development in Latin America's rural areas.

Leaders throughout the developing world are seeking to adopt strategies using their present available resources to enable the greatest possible number of people to better their socio-economic level. "National development in most poor countries has not halted a worsening of mass poverty in rural areas, widening economic and social inequalities between urban and rural populations, and the gap between rural employment opportunities and the increasing rural youth population". (1) Despite two decades of efforts to quantitatively expand formal education, an ever increasing proportion of rural youth are not receiving effective primary schooling. Further expansión of formal educational systems are not possible given the national economic constraints. Educational opportunities for rural adults are also minimal.

Latin America's yearly population growth rate is 2.9% indicating a predominantly young population (42% for Latin America and 46% for Colombia under 15 years of age). The

Recibido el 13-7-76.

average number of persons per family is six; 51% of the population is in the productive age group (15 to 64 years); with 60.7% of the population residing in urban areas; 30% of the total population comprises the work force, with 41% in agriculture.

In 1970 Latin American's per capita yearly income was approximately US $ 300. School dropout rates between 1961-1966 were 78% at the primary school level, 73% at high school, and 55% at the university level. The question is thus "what might be done through non-formal education, in addition to strengthening the schools, to help accelerate the social and economic development of rural areas?".

Social and economic development includes the nutritional status of the population. In Colombia which is indicative of the Latin American region, the 1971 nutritional indicators included: an infant mortality rate of 67.9 per 1,000 live births; 43% of total deaths in the 0-4 age groups; 20% of babies weighed under 2,500 grams; 66% of children under 7 suffered some degree of malnutrition; the specific mortality rate from measles and diarrhea was 95.0 per 100,000; and 30% of all pregnant women had nutritional anemia.

Studies carried out by the Institute of Family Welfare (ICBF) in Colombia demonstrate that the general prevalence of protein-energy malnutrition in children under 5 year belonging to low-income families (70% of the population) was 66,6% in 1967, and that of iron deficiency anemia 133/1,000 inhabitants. The Colombian University of Valle-Tulane PRIMOPS Candelaria study indicated that the most serious malnutrition cases were the last born in large (6+) families. (2)

The rapid population growth rate has accented the nutrition problem. In addition, the Colombian Health Ministry estimates that as many as 4-5 million people live in areas without practical access to bona fide medical care (over 60% of the population do not consult a doctor even once a year) (3). Health and educational services need to be distributed to the entire population.

The causes of Latin America's malnutrition can be principally attributed to inadequate income distribution (over 50% of the population cannot afford a minimum diet); lack of nutritional knowledge; unequal intra-family food distri-

bution; food supply; marketing; sanitation, poor health conditions, and the population growth rate. The Colombian National Nutrition Policy Plan being implemented in 1977 focuses on rectifying the above factors, and though a population policy is not part of the plan, reduced fertility is recognized as a factor influencing nutritional status. Programs specifically suited to local conditions are needed for implementation by institutions that will favorably affect the distribution of income such as credit, land reform, cooperatives, etc. in addition to non-formal education activities, and social health services that have a direct impact on living conditions. When a broad cross-section of the population benefits sufficiently from development-and not before-the motivation for smaller families is greatly increased and population growth significantly slowed.

Non-formal educational programs planned to provide rural teachers and educational agents with an understanding of their physical, social, economic and cultural environment are necessary that include knowledge and skills for household management, nutrition for all family members, consequences of population factors such as birth intervals and family size on family nutritional status; family responsibilities; community participation, etc. Non-formal education defined as "organized educational activities outside but complementary to the formal system, that is intended to serve specifically defined target groups and learning objetives", (4) can effectively strengthen and extend rural health development efforts by introducing and testing innovative educational instructional materials.

Public and private Latin American universities are endeavoring to create and implement continuing innovative non formal education approaches for rural school teachers and others. The role of the university in Latin America "elitist" up to recent time is increasingly being influenced to serve community needs. A university outreach multimedia program patterned on the English "Open University" model can contribute to providing a greater number of people educational means to better their quality of life.

National Nutrition Policy Plans such as that of the Chilean, Colombian and other governments, that incorporate interventions focusing on bringing about improvements in the nutritio-

nal status of low income groups, can support and extend the policy by incorporating 'Open University system' multimedia nonformal nutrition education innovative materials developed for and by the rural target populations. Nutrition education message content through-out Latin America in community centered programs has for too many years been limited to disseminating facts about nutrition which has had little effect in influencing the improved selection and consumption of foods. An example of this is the widespread use of the Food Group Charts developed by most Latin American Institutes of Nutrition. Little or no positive influence on food habits or improved nutritional status can be attributed to this teaching tool.

Nutrition education research has proved that it is a factor in improving dietary habits when the methodology is designed with that as a purpose, and when the learner is involved in the decision-making process. The use of real-life situations and group activities which give the learners some responsibility in planning their educational activities affords effective teaching of nutrition. An example is that of the Pontifical Javeriana University of Colombia's "Open University" Program. The outreach program focuses on rural needs of incorporates the educational principles essential to positively bringing about behavioral change such as demanded by food habit change.

The Pontifical Javeriana University outreach proposed multi-media, rural community focused nutrition education methodology would define and intergrate the specific felt-needs and resources of the rural target community into the educational messages. Message content would include knowledge and skills in nutrition and health for all family members, household food management; infant and maternal nutrition; consequences of population growth rate factors on family nutritional status (birth interval and family size); intra-family food distribution; food production and consumption, and sanitation. Costs per learner would be minimal for the non-formal activities by using and extending the formal educational system; donated rural school facilities; national televisión and radio trnsmission channels; part-time faculty involvement; and university facilities and equipment.

Educational programs are more effective when they are

directly tailored to the real interests and motivations of learners. "The creation of motivation is a problem of realistically linking education to social and economic opportunities and helping learners perceive these opportunities". (5) In addition, as stated by Coombs, a successful non-formal education program "needs to focus on expanding learning, opportunities to those keenly motivated to learn, who can most effectively use self-instruction, and who are most likely to retain and apply the acquired new knowledge". (6)

OUTREACH UNIVERSITY NUTRITION EDUCATION

A. **Procedure.** To assure a high learner acceptance probability in the University outreach program, educational messages should be created arising directly from felt-needs expressed by the rural communities.

The target population itself defines the content. University qualified personnel should initially design semi-structured problemsolving, instructional module guidelines. The guidelines are designed to motivate the teachers to the nutritional subject matter, and to serve as a reference framework. The rural teachers as a group with a monitor, apply the module on themselves, and record their comments. Monitors and university personnel, on the basis of the teachers comments and suggestions, select the teachers expressed priority needs and intergrate them into the guideline, defining and creating an instructional module. This initial module is then tested by the rural teachers in their classrooms and/or community in terms of: 1) technical design, and 2) relevance of content to rural needs. Evaluation feedback is incorporated into the final refined instructional module, which is then transmitted and mailed to all rural teachers in that specific geographical area. The problem-solving instructional module content is thus created from the food habits and needs of specific rural poor target populations, their prevailing cultural habits, current economic status.

B. **Instructional Modules.** The instructional modules sent to rural participating teachers and change agents, should be designed to incorporate the following steps of the learning process: a) Attention-the necessary first step in learning and which comprises two aspects: 1) the body senses (eyes

and ears), and 2) attention of the mind. b) Interest —initiation of personal involvement by the learner. c) Confidence —the learner must be encouraged to feel capable of learning the new concepts. d) Desire/Want —when the need to change or learn is strong, the individual will learn. e) Action —all meaningful learning incorporates "doing". A self-active process needs to be built into each module. f) Satisfaction —necessary for continued learning.

The instructional modules should consist of structured sequences of learning experiences specifically designed for individualized learning with built-in group support for effective change to take place. Weekly rural group discussion meetings can provide the group support element. The participating change agents meet in a rural school or free locale to receive weekly 10-15 minute television or radio instructional messages planned to complement and extend the written word instructional module. Groups of 8 - 10 rural change agents in each specific geographical area come together to receive the transmitted educational messages, to group study the written word instructional modules, and to exchange educational experiences arising from the modular learning. A coordinator is elected from and by the group.

The rural coordinators are of key importance to the success of the educational change process. Periodic intensive short courses can be implemented by the University Outreach program for the rural monitor coordinators. The monitors fill an essential feedback role and should be part of the University outreach team charged with developing the educational multimedia (TV and radio) weekly messages.

C. Methodology. The instructional module methodology can employ an educational structure of defined goals, generalizations, and behavioral objectives. The utilization of the structure as a set of understandings for learners to progress towards, stimulates problem-solving inquiry through the steps of data collection, examination, classification, and arriving at conclusions. The structure of goals, generalizations and behavioral objectives serves a dual purpose: a) it serves as a starting point for teachers to plan for the learners, and b) the learner reverses the route by moving from the learning experience to giving evidence of his learning, to verbalizing

the generalization, and moving towards the goal. University Personel define the content area goals, generalizations and behavioral objectives in a set of guidelines which provides flexibility stimulates the rural teachers to define their own suggested solutions to the problem.

The application of the nutrition content guidelines can employ a procedure that consists of a) motivation of the teachers, b) diagnosis of the nutritional status problem, c) causes, and d) suggested solutions. An initial series of four guidelines can for example, deal with such as the relationship of primary school student's nutritional status to their scholastic achievement, and between preschool age nutrition and family health, to motivate the rural teachers' interest in nutrition. The first and second guidelines should stimulate the teachers and change agents to seek answers to the nutritional problem by utilizing simple techniques for assessing the nutritional status of their students. Guidelines three and four could then assist the teachers in identifying factors within that community that may cause malnutrition, and to propose possible solutions.

The instructional modules can be readily understood, adapted, and applied by Latin American school teachers and change agents with little or no previous nutritional training. Rural change agents provided meaningful non-formal nutrition education instruments such as the instructional modules that arise from the specific rural needs, can have a decisive impact on improving the nutritional status, family health, and social development of large segments of Latin America's rural areas simultaneously with strengthening the formal school system.

Note: Copies of reference guidelines can be obtained by writing the author.

RESUMEN

Nutrición/Educación no-formal para el desarrollo de la población en Latinoamérica.

Módulos instruccionales innovativos de multi-medios en nutrición y salud derivados directamente de las necesidades expresadas por las poblaciones rurales, para ser empleados en educación no-formal, pueden contribuir a mejorar el estado nutricional de las poblaciones rurales de la América Latina.

BIBLIOGRAPHY

1. Coombs, Philip H. et al. "New Paths to Learning for Rural Children and Youth". Nonformal Education for Rural Development. International Council for Educational Development. 689 Fifth Avenue, New York, Oct. 1973, p. 1.
2. Wray, Joe D., and Alfredo Aguirre, "Protein-Calorie Malnutrition in Candelaria, Colombia. 1. Prevalence; Social and Demographic Factors", Journal of Tropical Pediatrics, Vol. 15, pp. 76-98, 1969.
3. U. S. Agency For International Development Mission to Colombia, "An Analysis of the Colombian Public Health Sector". p. 129, Dec. 1972.
4. Cooms, Philip H. et al. "New Paths to Learning for Rural Children and Youth". Nonformal Education for Rural Development. International Council for Educational Development. 680 fifth Avenue, New York, Oct. 1973, p. 11.
5. Coombs, Philip H. et al. "New paths to Learning for Rural Children and Youth". Nonformal Education for Rural Development. International Council for Educational Development. 680 Fifth Avenue, New York, Oct. 1973, p. 94.
6. Cooms, Philip H. et al. "New Paths to Learning for Rural Children and Youth". Nonformal Education for Rural Development. International Council for Educational Development. 680 Fifth Avenue, New York, Oct. 1973, p. 95.
7. Agency for International Development, Office of Nutrition, Technical Assistance Bureau, "Nutrition Education in Child Feeding Programs in the Developing Countries". Washington, D. C. 20523.
8. Food and Agriculture Organization of the United Nations (FAO), "Food and Nutrition Education in the Primary School", FAO Nutritional Studies, Nº 25, Rome, Italy, 1973.
9. Marshall, William H., "Nutrition, Behavior and Change", The Prentice-Hall Series in Family and Consumer Sciences, Prentice-Hall Inc, Englewood Cliffs, New Jersey, 1972.
10. Jelliffe, Derrick, et al. "Child Nutrition in Developing Countries", A Handbook for Fieldworkers. U. S. Department of State, Agency for International Development, Office of the War on Hunger, Washington, D. C. 20523, 1969.
11. King, Maurice H., et al. "Nutrition for Developing Countries", with special reference to the maize, cassava and millet areas of Africa. Oxford University Press, Ely House, London W. 1, 1972.
12. Population Referente Bereau, Inc., "Nutrition, Development and Population Growth", Vol. 29 Nº 1, 1755 Massachusetts Avenue, N. W. Washington, D. C. 20036, 1973.
13. Rich, William, "Smaller Families through Social and Economic Progress". Overseas Development Council, Suite 501, 1717 Massachusetts Avenue, N. W., Washington, D. C. 20036, Monograph Nº 7, January 1973.
14. Ritchie, Jean A. S., "Learning Better Nutrition", A second Study of approaches and Techniques. Food and Agriculture Organization

of the United Nations (FAO), Nutritional Studies, Nº 20, Rome, Italy, 1967.

15. Lane, Mary T., and Wileman, R., **"A Structure for Population Education"**. Goals, Generalizations, and Behavioral Objetives. Carolina Popularion Center, University of North Carolina, Chapel Hill, N. C. 27514, 1974.
16. Whitehead, Floy E., **"Nutrition Education Research Project, Report of Feasibility Study, Phase I"**. Agency for International Development (AID), Technical Assitance Bureau, Office of Nutrition, Washington, D. C. 20523. 1970.
17. Williams, Cicely D., and Jelliffe, D., **"Mother and Child Health Delivering Services"**, Oxford University Press, Ely House, London W. 1, 1972.