

## **Prenatal, Neonatal and Early Childhood Intervention in Six Hundred Families: A Study in Progress**

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**Abstract:** None available.

**Full Text:** EDITOR'S NOTE: This paper describes the first significant social application of the basic concepts of Pre- & Peri-Natal Psychology to a disadvantaged population in South America. Dr. Beatriz Guzman de Manrique initiated this project and continues to provide leadership. I think this work can be a model which both developed and underdeveloped countries can duplicate and should duplicate. What the paper lacks in the usual criteria set for academic journals, e.g., absence of abstract, summary, references, etc., it makes up for in originality of practical research and outcome data. I hope the reader will agree with us that once in a while we should bend the rules of the intellect in the service of the heart and the spirit. INTRODUCTION CEDIHAC stands for the initials in Spanish of "Centro de investigaciones para el Desarrollo Integral Humano a traves de la Comunidad": The Research Center of Human Integral Development through the Community. A non profit civil organization founded in Caracas, Venezuela in January 1986 with Dra. Beatriz Manrique as the President and a staff of a Vice-president, 7 Directors and its substitutes, CEDIHAC aims at promoting the development of human potentials: the more the individual members of a society are able to actualize their potentialities the better the level of that country life will be. "A healthy childhood through a well oriented family for a reliable Venezuela" is CEDIHAC's motto. Its main objective is to "democratize" science, that is, to bring to everyone, particularly to the family unit, the knowledge that today's science has in techniques and procedures for adequate stimulation, health and nutrition of the pre-nate and newborn. It is hoped that this will facilitate the harmonious development of the individual. Being a social research center, CEDIHAC attempts to relate to the community through the CEDI, The Stimulation Center for Integral Development. This is the operational center of CEDIHAC. It divulges, through the mass communication media, the results of the findings that CEDIHAC makes and offers them to the State and to international organizations. To this end, it publishes books, pamphlets and articles in newspapers and magazines. CEDI also gives training courses for teachers of the research program itself, as well as for educators, physicians, psychologist, social workers, nurses. We attempt to reach anyone linked to the task of orienting and guiding our children and our youth from the moment of conception on through adulthood. We started this conference by showing a slide of a fetus eleven weeks old. The idea was to show the importance of the prenatal environment and the fact that at this early age and even before, at the eighth week of pregnancy, all the organs and systems are already in existence (Jerome Lejeune, University of Descartes, Paris). Everything that happens to the mother will affect the baby; what she thinks, does or feels, what she eats. There is a close communication, a biochemical communication between the fetus and the mother that affects each other (Brattgard, 1981). This is very well illustrated in an investigation made by Emil Reinold, where pregnant mothers were induced to be frightened by the idea of the death of their baby inside her uterus. Immediately it was observed by ultra-sonic means, strong movements in the fetus (Verny, The secret Life of the Unborn Child). Prenatal psychology may prevent many problems if the parents realize the importance of this stage of the life of a human being. This is the reason why our research starts precisely at this early stage. We propose an investigation which consists in the training of parents, relatives and others who may surround the child with the latest available scientific knowledge concerning health, nutrition and adequate stimulation. This is motivated by the desire to promote the full growth and development of the baby from the moment of conception. Hopefully this will be accomplished within a family habitat of warmth and love. The "Multifactorial Educative Model" of integral intervention to childhood through the family (B. Manrique-Proyecto Familia, 1981), whose focal point is adequate stimulation from conception, knowledge of health and nutrition, reinforces the campaigns developed

by the Ministry of Health and Social Assistance (Ministerio de Sanidad y Asistencia Social) and the National Institute of Nutrition (Instituto Nacional de Nutrition). This model has been adapted to the Venezuelan population, whereby the State will be able to implant it using its own resources in a rational way, contributing to the establishment of a coherent and efficient policy towards the improvement of the living conditions of the needy population. Our first step begins with programmes applied at the prenatal stage, then at two days after the child's birth and once again after 12 months of age. The plan continues until the child is three years of age. Our program begins in the fifth month of gestation, when the youngest known child has survived premature birth. The stimulation exercises take into consideration that at this age (between 20 and 24 weeks of gestation) the fetus completes the hearing apparatus, the eyelids open, the respiratory movements begin (Chamberlain, Eisenberg, Verry). Our main objective is to prove scientifically, with strict measurement at the different stages of the investigation (anthropometrical measures, neurological scales, among others), the effects of the parental capacitation over the integral and harmonic development of their children. It is hoped that there will be a better integration of the couple and of the family. There is a chain: couple-child-family-society. A task of greater social transcendence could not be conceived: motivate, train and make the family group responsible for this natural mission which civilization has torn away from its hands. Our research program works with a socioeconomic class which constitutes 86% of the population of Venezuela. Approximately half of the Venezuelan children are born into illegitimate circumstances. This may be the cause and effect of current social instability. Thirty percent of the children in the city of Caracas are abandoned by their parents. They are the result of a human group which makes no kind of family planning. This cycle repeats itself and the family is later unable to attend to the basic necessities of its members. The child lacks affection, stimulation and security because the family is deteriorated or non-existent and his father image is distorted. (Monckenberg). It has been shown that programs for undernourished children must be accompanied by programs of Adequate Stimulation if they are to succeed. We hope to prove that it is possible to break the vicious cycle in which a child born into poverty finds himself, i.e., the child born in a poor environment where he receives neither the quantity nor the quality of food that he requires. If he is given food, it is most likely tainted (environmentally contaminated). Therefore he does not absorb the nutrients required, because he is prone to diarrheas and infections. His body ultimately adapts to its deficient diet. All the above described shows the great social necessity our country has in working in educational research programs of this type. LITERATURE REVIEW Concerning the relationship of environment-heredity. From quite a long time back, emphasis has been made on the importance of the first experience of relationships of the individual with the environment on the development of the adult (after Freud and until today, authors like Spitz, Provence, Lipton, Bowlby). If the background of genetic type can not be underestimated, its effects can be moderated and established on the organism under the influence of the environment (Wimbey and Wimbey, Feuerstein, 1981). Von Haller Gilmer (1970) affirms that behavior will appropriately develop if the organism is in the capacity of normally interacting with its environment, and adds that the product of his interactions are the differences between individuals. He says that if an individual with a high inherited potential is placed in a poor environment, his abilities will probably be very poor. At the same time if an individual has a lower inherited potential, his limitations while trying to improve will be obvious even if he is placed in a rich environment. This is supported by the theory of cognitive structures stated by Reuven Feuerstein, 1981, which has proved the modulating power of the environment in order to decrease the negative effects that can influence the normal development of the human being. The modulating power of the environment is possible thanks to the brain's plasticity, which has been defined as "the possibility of structural and functional modification of neurons according to its use or disuse" (Manrique, 1984). Newcomb and Etchegoyen (1981) affirm that the newborn has less than one third of the capacity of the total brain activity at the moment of birth. Interacting with the environment the central nervous system and the brain's cortex increase their weight and width. This potential capacity of action has a genetic nature, but the enriched and motivated environment is the one which allows such a potential to fully develop. It has been considered that the stage

between pre-conception up to six years of age has characteristics of great immaturity and brain plasticity. Seventy percent of the maturation of the central nervous system is genetically determined and the rest of the maturation depends on the environmental action (Ernesto Palacios Pru, in Beatriz Manrique "Un Cambio a partir del Nino," 1985). This is why we believe that it is vital to expose the child, particularly during this period, to a rich environment. It is the precise moment when he will benefit the most. The knowledge of the development and maturation of the nervous system and the influence of the environment in such development serve as the basis for the implementation of similar programs to promote the adequate stimulation of the pre-nate, neonate, and infant. A multitude of variables including heredity, genetics, physical accidents, ecological factors, psychoaffective, socio/economic, and cultural factors, constitute the total experience of a human being. These variables express themselves as a structural and functional unit within each child. In our program, the concept of the child as a bio-psycho-social unit has been adopted in its most dynamic form with the purpose of obtaining and producing a human being with more probabilities of enhanced intellectual, emotional and social development and with the possibility of an authentic fulfillment of his or her maximum potential. It is also hoped that there will be a secondary benefit to the child's community. Our research program is based upon the Educative Multifactorial Model of Adequate Stimulation, Health and Nutrition. The focal point of the program is the adequate environmental stimulation. That is to provide an environment enriched in stimuli that promotes the full development of the child's potentialities through a mediator (mother-father-family). It is directed towards the four areas of the development: Perceptual-motor, Cognoscitive, Language and Socio- affective. The stimulation must be adequate, systematic, continuous, differentiated and qualified, and is based upon the following: 1.- Environmental stimuli and incentives are aimed at satisfying the basic needs of the child in a context of love and care. 2.-Each child has potential that allows him or her to grasp and manipulate stimuli from his environment selected in a gradual and differentiated manner, according to his characteristics, maturity level, evolutionary stage and family particularities. 3.-Each child's development not only depends upon his potentialities. Besides that, the stimuli and answers that he receives from the environment, mainly those of his family surroundings, interact with his potentialities. Both, the environmental stimulus and his or her potentialities influences their development. 4.-The effective development of the child's potentialities depends upon the freedom he is given to explore the world, to discover things for himself, as an agent of his own actions. The Multifactorial Model educates for health in its fullest sense. We use the World Health Organization's definition: "Health is the physical, mental and social wellbeing that goes beyond the absence of illness or incapacity." It also educates for nutrition, adequate for each developmental stage of growth. Methodology Our investigation is utilizing an experimental factorial design in the field. We are working within the following universe: Mothers: -Venezuelan. - Primipara. -Ages between eighteen and twenty six years. -Socio-economic level: Graffar's Social Stratification Scale. Strata IV and V. -Members of the four quarters chosen for the investigation. -Those who voluntarily attend the multiple services centers before the twenty fourth week of pregnancy. -Those who go for delivery to the three Maternity Hospitals chosen for the investigation. -"Healthy Pregnancy." Opinions of the obstetricians (rejection of high risk pregnancies). Independent Variable: differential application of the Multifactorial Educative Model: adequate stimulation, health and nutrition. Control Group O: mothers without application of the Model; measurements of the newborn, one month old and three years old (with the minimum of interventions, considering evaluations as interventions-Campbell). Control Group 1: mothers without application of the Model; measurements at all ages (newborn, one month old, eighteen months old and three years old). Experimental Group 2: Mothers with application of the Model in the prenatal and neonatal stages; measurements at all ages (newborn, one month old, eighteen months old and three years old). Experimental Group 3: Mothers with application of the Model in the prenatal and neonatal stages and a year after the baby's birth; measurements at all ages (newborn, one month old, eighteen months old and three years old). Moderating Variables of the Independent: 1. Mother's age. 2. Socio-economic level. 3. Chosen Medical Attention Centers. 4. Number of classes the mother attends in the programmed order. 5. Father's presence in the mother-child unit (father's

degree of involvement). 6. Presence of any other adult relative. 7. Education level of the mother and father. 8. Self esteem of the mother. Dependent Variables: 1. Level of child's growth 2. Level of child's development. 3. Mother-child socioaffective relationship. 4. Indicators that affect labor. 5. Attendance to Prenatal and Odontological Control. 6. Number of premature births. 7. Level of the Couple's Integration. Evaluation Instruments 1. Anthropometrical Measures: Height Weight Cephalic Circumference Arm Circumference 2. Apgar 3. Labor instrument (mother) 4. Labor instrument (physician) 5. T.B. Brazelton Neonatal Behavioral Assessment Scale 6. Broussard Inventory of Neonatal Perception 7. Self esteem Scale 8. Questionnaire of the Child's health Selection Procedure A group of trainees (at least one per center) will select subjects for this study. They will choose the mothers that meet the criteria and will record their data in a duplicate interview form. Mothers will be random assigned to each of the experimental and control groups. Each mother will be assigned to the corresponding Maternity Hospital and will be handed a card and an envelope containing the measure instruments for the delivery room physician and an instruction pamphlet for him. Data will be recorded in a list, and a copy of same will be sent to each Maternity Hospital. Experimental Procedure The mothers of the Test Groups will be identified in the admissions files of the Maternity Hospital; they will appear in the lists sent by the persons in charge of the selection in the Centers, and they will bring a card, the envelope containing their information and the instrument for the physician in the delivery room. The physician and a psychometrician will administer and record the various instruments. The experimental groups 2 and 3 will have the application of the Educative Multifactorial Model of Adequate Stimulation, Health and Nutrition in the prenatal stage. This consists of 13 classes of 2 hours each, applied once weekly during approximately 3 months. They are structured as follows: 1. Relaxation (read or play the recording) 2. First theoretical part of the class 3. Exercises and respirations 4. Recess 5. End of theoretical part 6. Evaluation, using the rotafolio 7. Visualization (review with the mind's eyes) The experimental group 3 will have the neonatal intervention in which an overlook of the parents knowledge of the puerpery and breast feeding will be made. Exercises involving sensorial and motor stimulation will be given to each mother, being sure that she understands them and knows how to apply them to her baby. Projection to the one year old baby, with emphasis upon support material will be given to each mother ("Answer to your baby: a guide from prenatal stage to 3 years"). Social Benefits of the Investigation Once the achievements of the proposed Multifactorial Educational Model are known, the CEDIHAC hopes to utilize these at the national level on blue collar workers and the very poor, which constitute 85% of our country's population. This intervention model, which may exert a great and direct influence on the Venezuelan Community will strive for a substantial and authentic change at the family level, with special emphasis on the child. It is based on the latest knowledge and is designed for and applied to the Venezuelan social reality. The CEDIHAC takes advantage of the Government's physical and human infrastructure to obtain maximum social benefits at a minimal cost. It is hoped that the interdisciplinary team which works with the child and its family will benefit from an experience which enriches it both personally and professionally. It allows the Government an action model which rationalizes the use of human, institutional and financial resources in its social advancement purposes. It is hoped that eventually the Model may be applied in other Latin American countries, as well as other developing nations of the world. We hope to enhance the capability of every human being for fending for himself through his own effort and his own increasing development, while actively seeking changes within his family, and therefore, the whole community. We will try to demonstrate that low cost social change is possible if we begin to work with the human being from the moment of conception on, and then guide him to proceed systematically until he links with the formal education program. This could avoid school dropouts, or at least reduce them to a minimum. It is hoped that this first investigation will generate other investigations along this same line so as to compare results and goals, and to analyze changes which may occur on inter and intra familiar levels, as well as changes in the roles played by family members in a psychobiological and psychosocial context. With these results we hope to offer educational proposals of a high social scope which induce a profound structural change in the socio-educational policies. Author Affiliation Address correspondence to

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