

SEMI-ANNUAL REPORT

Functional Implication of Malnutrition
(NUTRITION CRSP No. -931-1309)

KENYA PROJECT

October 1, 1983 -- March 31, 1984

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The Kenya project has accomplished a great deal in the last six months. Pilots were completed for each functional measure; senior investigators and principal investigators participated in research design development and alteration of the methodology for these measures; and Kenyan staff implemented the measures and the changes in an excellent manner. All study households have been initiated into the main study and the appropriate measures have been collected on the households and the target individuals in each of these households.

Trips to Kenya were made by the following US investigators.

Charlotte Neumann, M.D., Principal Investigator, January 13 - February 13, 1984. Purpose: to monitor the initial phase of the main study; to further organize the research site and personnel; to facilitate the visits of Management Entity representatives Dr. Doris Calloway and Dr. Judith Balderston.

Robin Gorsky, Ph.D., co-Principal Investigator, through October 31, 1983. Purpose: to monitor the final phase of the Phase I work; to assist in scheduling household initiation into the main study and measures within households; to advise on activity (time allocation) methodology.

Anne Coulson, Senior Investigator, December 6 - 23, 1983. Purpose: to arrange acceptable data coding and processing; to direct Mr. Njeru, the project computer assistant; to negotiate a data processing contract; to set up the final data flow network.

Gerald Gardner, Ph.D., Senior Investigator, January 9 - 31, 1984. Purpose: to verify RMR data collection and procedures; to check out the Beckman MMC and install generator; to train personnel on use, care, and maintenance of the MMC.

Marion Sigman, Ph.D., Senior Investigator, February 1983. Purpose: to reevaluate and adapt the cognitive measures for the Kenyan situation; to modify the observational system designed in September; to set up a playground observation scheme; to train personnel on the Brazelton.

The Kenya project has initiated 243 households for main study data collection. These are households which include at least one target individual. The project has also identified an additional 52 households which have potentially qualifying target individuals, i.e. woman potentially pregnant or offspring of lead female reaching target age. The project has lost 17 households due to lack of cooperation or household leaving study area. Thus

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the project has 225 households currently enrolled with 52 potential enrollees. There are 225 lead females and males, 117 schoolers, 104 toddlers, and 19 infants as current members of these households. The members of potential households will slightly improve these numbers.

Households were brought into the main study beginning in November and December 1983. A census update in October yielded 310 appropriate households for study, according to the criteria of likely pregnancy in the next twelve months and the presence of toddlers in the household. This household initiation was preceded by a series of community meetings at which the research methodology and criteria for household participation were reviewed. Upon enrollment, the household was visited by senior staff members. Food intake, health background and morbidity, anthropometry, pregnancy and reproduction, socioeconomic and sanitation data were collected. Households were scheduled for physical examinations of the target individuals, blood drawing for hematology and immunology, stool examination, and RMR measurements. Bayley testing was begun on toddlers.

A summary of measures by subject type, activity type, and timing is shown in the following table (through 4/30/84).

MEASURE	TARGET INDIVIDUALS	TIMING
Food Intake	3 sets on everyone	2 days/mo
Morbidity Lab *	12 visits on all HH (3 composites) once on everyone	weekly 2/year
Anthropomy	3 sets on everyone	monthly
Repro Hist Pregnancy	once on all lead females 3 on each lead female	once monthly
Mother-Child Interactn	once on all toddlers	quarterly
Uzguris-Hnt	twice on all toddlers	monthly
Bayley	twice on all toddlers	monthly
Socio-econ	once on all households	quarterly
Sani-hygien	once on all households	quarterly
Census Updt	once on all households	

*Lab includes physical exam, medical history, sample collections

The Kenya project has a payroll of over 150 locals. New hires as well as old hands have been trained in the current methodology

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according to decisions made both by Management Entity and by the US and Kenyan senior staff. Alterations in methodology are particularly difficult to implement when staff are required to learn new techniques of measurement and survey-giving, since the only methodology the local staff knows is what the senior staff has taught them.

Data management activities in the last six months have included signing a contract with a Nairobi computer support firm for data processing of completed data forms, setting up a workable data flow scheme (discussed below), and constructing a fire-resistant data storage facility adjacent to the central Embu office.

The data flow is as follows. The main study area is divided into four clusters of approximately equal number of households. Each cluster has a field office staffed by a full-time field staffperson. This person is responsible for checking out to the supervisors of each functional area the appropriate forms for the households to be surveyed each day. This person is also responsible for collecting the completed forms (after the functional supervisors have checked the forms for completeness and accuracy) and checking these collected forms against the forms expected to be completed. These completed forms are then collected from each field office and brought to the central Embu office. Forms are then taken to Nairobi for processing. Any mistakes found during data processing are circled in red; the offending form is returned to Embu for correction by senior staff or by field staff. Data is processed onto floppy disks which are then used to make computer tapes for shipment to the US. The Kenya project is also processing raw data at UCLA as a check on the accuracy of the current data processing arrangement.

The Kenya project, upon the suggestion of Dr. Calloway, has rented two additional four-wheel-drive transport vehicles. These will have to suffice while waivers for purchase of like vehicles are in the approval process. The Apple IIe computer has arrived and is being used to schedule workflow, keep track of data, and perform various accounting functions.

Additional US staff include Mr. Bill Martin, from Tulane University, as the project administrator. His responsibilities include quarterly fund requests, expenditures monitoring, fiscal management, inventory, purchasing, personnel, data flow, vehicle fleet management, and various aspects of daily operations. He has a Kenyan accountant working with him.

A change in Kenyan Principal Investigator has been effected. Nimrod Ewibo, M.D., Principal of the College of Health Sciences (which includes the Medical School), has replaced James Kagia, M.D.

Having collected data on all functional areas in main study

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households, the Kenya project does not feel that any of the June 1983 hypotheses need reformulation, except perhaps to more clearly state the CRSP definition of behavior. It is too early to tell whether the data as collected will prove or disprove the original hypotheses.

The first hypothesis -- relating maternal food intake, maternal activities, and infant behavior and morbidity -- can be addressed given the data currently being collected on household and individual food intake and morbidity as well as the reproduction, sanitation and hygiene, caregiving, and cognitive instruments.

The second hypothesis -- relating toddler and maternal food intakes with toddler behavior and morbidity -- can be addressed given the data currently being collected on food intake and morbidity as well as the sanitation and hygiene, caregiving, cognitive, mother-child interaction, and anthropometry measurements.

The third hypothesis -- relating schooler food intake with his/her morbidity and behavior and parental food intake with their behavior toward their child -- can be partially addressed by the food intake, morbidity, cognitive, and anthropometric measures. Without measures on parent-child interaction and activities, a complete linkage through this hypothesis may be missing.

The fourth hypothesis -- relating adult food intake with adult behavior, morbidity, performance, as well as adult interaction with other household members -- can be partially addressed by the food intake, morbidity, and cognitive measures. Without some data on the interaction of household members and the differing activities and roles played by household members, there may be incomplete linkage through this hypothesis. Some information will be gleaned from mother-child interaction observations; but activity observation and role identification would strengthen this hypothesis.

The fifth hypothesis -- relating RMR with energy equilibrium adaptation -- can be partially addressed with the RMR and food intake data. However, a lack of information regarding changes in activity and roles will hamper resolution of this hypothesis.

The sixth hypothesis -- relating household food intake to household morbidity -- can be addressed by the household food intake and morbidity measurements.

A summary of the Kenya project activities of the last six months may be seen below.

October Resolution of household selection and study area design. Translation of forms into Kiembu. Final version of main study forms sent to printer. Scheduling of household

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initiation begun. Community meetings held in each sublocation. Completion of enumerator and supervisor training. Completion of field manuals for each measurement. Rental and preparation of field offices. Resolution of areas of responsibility of senior staff.

November Arrival of Bill Martin, project administrator, and orientation of him into the project. Further training of field staff with regard to the latest changes in research design. Training on new equipment. Validation study of food intake methodology completed. Market survey completed. Further scheduling of households and measurements. First households approached and initiated into main study. First measurements begun on these households. Case studies begun.

December Further initiation of households. Improvements made in scheduling measurements, field staff, and transport. Christmas differences in household functioning observed. Visit of Ms. Coulson regarding data flow and analysis.

January Visit of Dr. Neumann. Visits by Drs. Calloway and Balderston. Visit by Dr. Gardner to set up, check, and train staff for RMR measurements. Initiation of remainder of main study households and all measurements. Rental of two additional transport vehicles.

February Visit of Dr. Sigman to implement remaining cognitive measurements and to train staff in collection of these data. Hiring of Kenyan psychologist. Completion of case study on 20 households. Further refinement of main study measurements and scheduling.

March Continued main study data collection. Summary preparation of data for May SCB meeting.

In conclusion, the Kenya project feels confident with progress to date and with future plans for continuation.