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Principal Investigator Dr. Stan D'Souza
Application No. 81-024(P)
Title of Study Pilot Study on Socio-economic Status and its Association with Nutrition and Morbidity.

Co-Investigators: Sandra L. Huffman & Abbas Bhuiya

Supporting Agency (if Non-ICDDR,B) _____
Project status:
 New Study
 Continuation with change
 No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA).

1. Source of Population:
 - (a) All subjects Yes No
 - (b) Non-ill subjects Yes No
 - (c) Minors or persons under guardianship Yes No
2. Does the study involve:
 - (a) Physical risks to the subjects Yes No
 - (b) Social Risks Yes No
 - (c) Psychological risks to subjects Yes No
 - (d) Discomfort to subjects Yes No
 - (e) Invasion of privacy Yes No
 - (f) Disclosure of information damaging to subject or others Yes No
3. Does the study involve:
 - (a) Use of records, (hospital, medical, death, birth or other) Yes No
 - (b) Use of fetal tissue or abortus Yes No
 - (c) Use of organs or body fluids Yes No
4. Are subjects clearly informed about:
 - (a) Nature and purposes of study Yes No
 - (b) Procedures to be followed including alternatives used Yes No
 - (c) Physical risks Yes No
 - (d) Sensitive questions Yes No
 - (e) Benefits to be derived Yes No
 - (f) Right to refuse to participate or to withdraw from study Yes No
 - (g) Confidential handling of data Yes No
 - (h) Compensation &/or treatment where there are risks or privacy is involved in any particular procedure Yes No N.A.

5. Will signed consent form be required:
 - (a) From subjects Yes No
 - (b) From parent or guardian (if subjects are minors) Yes No
6. Will precautions be taken to protect anonymity of subjects Yes No
7. Check documents being submitted herewith to Committee:
 - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies) Protocol (Required)
 - Abstract Summary (Required)
 - Statement given or read to subjects of nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (Required)
 - Informed consent form for subjects
 - Informed consent form for parent or guardian
 - Procedure for maintaining confidentiality
 - Questionnaire or interview schedule
- * If the final instrument is not completed prior to review, the following information should be included in the abstract summary:
 1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
 2. Examples of the type of specific questions to be asked in the sensitive areas.
 3. An indication as to when the questionnaire will be presented to the Cttee. for review.

We agree to obtain approval of the Ethical Review Committee for any changes involving the rights and welfare of subjects before making such change.

Principal Investigator [Signature]

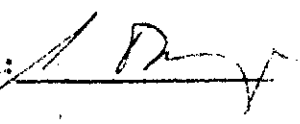
Co-Investigator [Signature]

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SECTION I - RESEARCH PROTOCOL

- 1. Title: Pilot Study on Socio-economic Status and its Association with Nutrition and Morbidity.
- 2. Principal Investigator: Stan D'Souza
- 3. Co-Investigators: Sandra L. Huffman & Abbas Bhuiya
- 4. Starting date: June 10, 1981
- 5. Completion date: July 9, 1981
- 6. Total direct cost: US \$3,000
- 7. Scientific Program Head:

This protocol has been approved by the Community Services Research Working Group.

*Signature of Scientific Program Head: 

Date: 25/5/81

*This signature implies that the Scientific Program Head takes responsibility for the planning, execution and budget for this particular proposal.

- 8. Abstract Summary:
 This study is the second part of SES and mortality investigation in the five villages of Matlab area to assess the association between socio-economic status, nutrition and morbidity. This information would be helpful in the formulation of programs to meet the health needs of the community. With regard to morbidity an attempt will be made to develop a minimal morbidity list for Matlab area by combining the WHO 'minimal morbidity list' and the one already used in Matlab area. This will serve as a lay reporting aid to non-medical health workers for reporting morbidity and causes of death.

9. Review:

a) Ethical Review Committee: _____

b) Research Review Committee: _____

c) Director: _____

d) BMRC: _____

e) Controller/Administrator: _____

ABSTRACT SUMMARY - PARTICULAR ITEMS

1. All children less than 5 years of age and women of age 15-44 years will be selected for study since children of that age group are more vulnerable to malnutrition and mother leads to a cycle of malnutrition in the community because of its effect in contributing to low birth weight of infants.
2. No risks; not applicable.
3. Not applicable.
4. Data will be analysed and published in aggregate and there is no possibility of identifying individuals.
5. A verbal consent form will be approved by the head of household before starting the work.
6. Interview and anthropometric measurements will be conducted at the respondent's house and questions on morbidity will be asked and it will take half an hour time.
7. No direct benefits to individuals, will provide a better understanding of the relationship between morbidity, nutritional status and socio-economic status which may be an aid to the planners for a better health planning.
8. Use of SES records of the households.

Statement about Confidentiality

Verbal consent will be obtained from the head of households. Implied consent will be assumed for other family members (see Appendix I).

Identifying information (name, census number) appears on the questionnaire forms (see Appendix IIb). Because it is necessary to link events using this information which cannot be deleted. However, the staff who have access to these questionnaire is trained and aware of their confidential nature.

After the data is linked, all analysis is done using aggregate information. There is no way that individuals can be identified.

SECTION II - RESEARCH PLAN

A. INTRODUCTION

This limited study represents the second part of a socio-economic investigation in five villages of the Matlab area. This Pilot Study focuses on the socio-economic status and its association with nutrition and morbidity. Data collection on the first part of the study has been completed and is now being tabulated. The principal purpose of the present investigation is to assess which socio-economic factors correlate most closely with nutrition and health status. This information would be helpful in the formulation of programs to meet the health needs of the community. In order to address those in greatest need of health services, simple indicators to delineate which children experience high rates of diseases from those that are ill less often would help programs set priorities for service. Community health surveys which could obtain this information are costly and time consuming. Information on a few select socio-economic factors is easier to obtain. This information would facilitate the development of those inputs related to nutritional status through the use of socio-economic indicators focusing on children likely to be malnourished.

With regard to morbidity there is interest on a world-wide basis on the problems of 'lay reporting of health information' (1). It is not possible especially in the rural areas of developing countries to obtain medical validation of diseases or even for causes of death. A fundamental need has been felt for training health workers--paramedics--who would be

capable of diagnosing, from a set of simply recognised symptoms, particular diseases. WHO has set out a list called 'minimal morbidity list' where some diseases can be recognised by non-medical personnel. This list is found in Appendix 1.

Pilot runs were conducted in the State of Gujarat to examine the suitability of the WHO prepared lists. These runs were conducted for three months. The data related to 4200 cases of morbidity. The evaluation of the use demonstrated the feasibility of adopting a list. It was found to be of great advantage for the personnel if they were familiar with the symptoms of common diseases. (2).

The approach of lay reporting can only give probable causes of morbidity. It is not conceived as a substitute for diagnosis given by a testing physician. However, the data can be utilised for better planning. Major groups of diseases indicated their relative importance.

Field trials of a pilot nature were also carried out in Burma, Maldives, Sri Lanka, Thailand as well as in several areas of the Western Pacific region. The result of these trials had demonstrated that international lists when adapted to suit local needs can be used to obtain crude diagnosis of death or diseases (3). As a result of the field trials the lists were modified to the one published by the WHO in 1978 mentioned earlier.

This study is intended to assess whether this particular list, in addition to those already utilised in the Matlab area (Appendix 2) could be consolidated into a single list which could then be utilised throughout the area under surveillance.

B. SPECIFIC AIMS

1. Selection of SES indicators that correspond to nutritional and health status in order to select out the characteristics of families that are at risk of being malnourished and having high rates of diseases.
2. Development of 'minimal morbidity lists' which can be utilised in the Matlab area by May reporters and health assistants.

C. MATERIALS AND METHODS

As described in Part I of this Pilot Study protocol, 5 villages will be selected for study. Over the past 10 years these villages have been included in other studies collecting nutritional data. The past correlation between malnutrition and SES can be assessed, and then compared to the present situation. In addition, there has been little previous work on the association between morbidity and SES. The current pilot study will also allow an examination of this association. The specific methods for data collection and analysis are described below.

Subjects

Because preschool children are the most vulnerable to malnutrition, all children aged less than 5 years will be included from the study villages.

In addition, because of the particularly vulnerable state of women in Bangladesh in relation to intrafamily food distribution, frequent pregnancies, and cultural restriction on diet, they often experience low levels of nutritional status. Poor nutrition in the mother leads to a cycle of malnutrition

in the community because of its effect in contributing to low birth weight of infants.) Therefore women residing in these villages aged 15-44 will be included for study as well.

SES data from the five villages is now being tabulated on the S-34 in Dacca. The list of subjects for this present study--children under 5 and mothers aged 15-44--will thus be obtained. At present an estimate of 4500 respondents has been made. Based on completion of 30 schedules per day, 5 teams (2 persons each) will require 30 days to complete the job. The budget has been based on these assumptions.

Measurement of Nutritional Status

The following measures of anthropometry will be used as indicators of nutritional status: weight, height, and arm circumference.

Weight

The measurement of weight allows an assessment of current nutritional status defined as body mass. During periods of nutritional deficiency, muscle and fat deposition is reduced. When comparisons are made to reference standards of weight-for-height, one is able to assess the level of wasting in children, or acute malnutrition. Weight measurements will be made in a beam balance scale which will be calibrated in the field before each weighing. They will also be checked for accuracy each morning and evening to ensure reliability.

Height

Height is a measure of linear growth. During long periods of nutritional deprivation, growth is retarded and the child becomes stunted. Comparisons of height levels in relation to reference standards of height-for-age allows an assessment of stunting, or chronic malnutrition. Height will be measured using a

stadiometer. Standing height will be taken for women and children over the height of 100 cm. Lying lengths will be taken for children less than 100 cm.

Arm Circumference

Arm circumference is often used as an indicator of body mass. It is easier to take in field conditions than weight or height since large bulky equipment is not needed. It will be collected in this study in order to assess whether it could serve as easily available indicator for nutritional status that could be obtained while the census data is being collected. Thus the time and training needed for these measurements will be carefully recorded. Arm circumference will be taken with an oil cloth tape in the midpoint of the left upper arm.

Morbidity

A questionnaire to be administered to the women and the mothers of the children will be used to elicit information on morbidity experience. This will include information on the prevalence of illness during the last 24 hours, last 2 weeks, and during the previous year. The list of diseases will be elaborated on the basis of pretests done in a village separate from the 5 study villages using those in Appendix 1 and Appendix 2 respectively. A preliminary code book will be prepared.

Tables for Analysis

The following tables will be prepared for the analysis. This will be done for the previous study results on nutrition, and previous census information on SES. In addition, the current nutritional health status will be compared to the current socio-economic variables.

1. Nutrition of children

For each age, and sex, weight-for-height, weight-for-age, arm circumference for age, and height-for-age will be tabulated by the socio-economic factors obtained in part 1 of the study.

2. Nutrition of women

Weight, height, and arm circumference of the women will be tabulated by the same socio-economic variables.

3. Morbidity

The prevalence of the specified illnesses for the specified time will be correlated by the same socio-economic variables.

D. FACILITIES REQUIRED

The logistic support of the three branches--data management, computer and the Matlab field station--will be utilised. Details of personnel utilisation are to be found in the budget.

E. COLLABORATIVE ARRANGEMENT

Dr. Sandra Huffman, from Johns Hopkins University will be a co-investigator of the study.

SECTION III - BUDGET

A. Detailed Budget

1. PERSONNEL SERVICES

<u>Position</u>	<u>%Effort</u>	<u>No. of days</u>	<u>Annual Salary</u>	<u>Requirements</u>	
				<u>Taka</u>	<u>Dollar</u>
<u>Field Surveillance Branch</u>					
10 Health Assistants	100	30	22,529	26,000	
<u>Data Management Branch</u>					
1 Data Processing Asstt.	100	45	25,020	4,330	
1 Coding Assistant	100	15	22,529	1,130	
<u>Computer Services</u>					
1 Analyst Programmer (National)	50	15	48,776	1,407	
1. Data Entry Technician	100	10	27,105	1,043	
Sub-total				34,080	

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2. <u>SUPPLIES AND MATERIALS</u>	<u>% Effort</u>	<u>No, of days</u>	<u>Annual Salary</u>	<u>Requirements</u>	
				<u>Taka</u>	<u>Dollar</u>
Stationary				1,500	
3. <u>EQUIPMENT</u>					
None					
4. <u>PATIENT HOSPITALIZATION</u>					
None					
5. <u>OUTPATIENT CARE</u>					
None					
6. <u>ICDDR, B TRANSPORT</u>					
Dacca-Matlab-Dacca 4 trips				1,420	
Matlab Speedboat (one boat				5,716	
one hour daily for 30 days)				<u>7,136</u>	
7. <u>TRAVEL AND TRANSPORTATION OF PERSONS</u>					
None					
8. <u>LOCAL TRAVEL</u>					
None					
9. <u>INTERNATIONAL TRAVEL</u>					
None					
10. <u>TRANSPORTATION OF THINGS</u>					
None					

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	<u>% Effort</u>	<u>No. of days</u>	<u>Annual Salary</u>	<u>Requirements</u>	
				<u>Taka</u>	<u>Dollar</u>
11. <u>RENT, COMMUNICATION AND UTILITIES</u>					
Communication				1,500	
12. <u>PRINTING AND REPRODUCTION</u>					
Questionnaires, cyclostyling (5000 copies)				1,020	-
Other printing and reproduction material				2,500	-
				<u>3,520</u>	
13. <u>OTHER CONTRACTUAL SERVICES</u>					
None					
14. <u>CONSTRUCTION, RENOVATION, ALTERATION</u>					
None					
15. <u>MISCELLANEOUS COMPONENTS</u>					

B. BUDGET SUMMARY

<u>CATEGORY</u>	<u>TAKAS</u>	<u>DOLLARS</u>
1. Personnel	34,080	-
2. Supplies	1,500	-
3-5 Nil items	-	-
6. ICDDR,B Transport	7,136	-
7-8 Nil items	-	-
9. Communication	1,500	-
10. Printing/Reproduction	3,520	-
11-13 Nil items	-	-
Total	47,736	-
Total in Dollars	\$ 3,000*	

*Calculated at Kk.15.90/\$1.00

APPENDIX - A

Verbal Consent Statement

The International Centre for Diarrhoeal Disease Research, Bangladesh (formerly Cholera Research Laboratory) is planning to collect informations on weight, height, arm circumference and morbidity of children less than 5 years of age and women of age group 15-44 years. Our female workers will measure height, weight and arm circumference of the children and women. They will also ask some questions on morbidity of the children and women for the last 24 hours, 2 weeks and during previous year. All informations given will be treated as confidential. Please note that no one will be paid. One may at any time refuse to participate. If you have any questions we will try to answer them. Do you have any questions? Do you agree to participate?

(Appendix A)

Bengali Version

ঐতিহাসিক স্মৃতি পত্র

আনুষ্ঠানিক উদ্দেশ্যে গঠিত হওয়া (প্রাক্তন কলেজ
 শিক্ষা পরিষদে) পাঁচ বছর পোড়ো বছর পর্যন্ত ১৯৫৬-৫৮
 ৫৯-৬০ সালের মাসিক উন্নয়ন, উন্নয়ন, বাস্তব সমস্যা
 সম্বন্ধে গঠিত হওয়ায় অসম্পূর্ণ উন্নয়ন তত্ত্বাবধি মন্ত্রণালয়
 কাজ চালিয়ে গিয়েছে। অসম্পূর্ণ মাসিক উন্নয়ন
 পরিষদে বাস্তব উন্নয়ন উন্নয়ন নিয়ম, উন্নয়ন ও বাস্তব
 পরিষদে কাজে গিয়ে গঠিত হওয়ায় অসম্পূর্ণ মাসিক উন্নয়ন
 পরিষদে। এটিমধ্যেই বাস্তব উন্নয়ন তত্ত্বাবধি মন্ত্রণালয়
 গঠিত। এজন্য অসম্পূর্ণ মাসিক উন্নয়ন পরিষদে
 গঠিত। কেউই জানে না (কোন সময় গঠিত হওয়া
 উন্নয়ন পরিষদে বাস্তব উন্নয়ন। এজন্য অসম্পূর্ণ
 উন্নয়ন পরিষদে অসম্পূর্ণ উন্নয়ন পরিষদে গঠিত হওয়া
 উন্নয়ন পরিষদে গঠিত হওয়া কি?
 উন্নয়ন পরিষদে অসম্পূর্ণ মাসিক উন্নয়ন পরিষদে

APPENDIX I

Minimal Morbidity List

	<u>Description</u>	<u>Detailed List No.</u>	<u>Possible Diagnosis</u>
1	Fever with skin eruptions	010-012	Measles, Chickenpox, Smallpox
2	Fever with neck rigidity, vomiting, skin rash	024	Meningitis
3	High fever, intermittent, with chills and prostration	030, 031	Malaria
4	Fever, unqualified	039	
5	Yellow skin, yellow whites of eyes	046	Jaundice
6	Skin sores and ulcerations, unqualified	049	
7	Diarrhoea and vomiting, massive dehydration, watery stools	050	Cholera
8	Diarrhoea, abdominal pain, mucopurulent and bloody stools	060	Amoebic dysentery
9	Diarrhoea, unqualified	069	
10	Abdominal pain, rigidity of abdominal wall	070	Acute abdomen
11	Other abdominal pain or swelling	071, 072	
12	Chronic cough with loss of weight, blood in sputum, slight fever	080, 081	Tuberculosis
13	Acute cough, fever, chest pain, shortness of breath	082	Pneumonia
14	Nose and throat discomfort, watery discharge, cough, fever	090	Common cold, Upper respiratory infection
15	Breathing difficulty, shortness of breath, chest pain, swollen ankles	100	Heart disease

16	Burning pain during urination, discharge of pus from urethra (male)	113	Gonorrhoea
17	Sore eyes and other eye complaints	12	
18	Toothache and other mouth problems	130-133	
19	Ear pain, discharge	135	
20	Locked jaw, muscular spasms, history of open wound or childbirth	141	Tetanus
21	Convulsions, with unconsciousness	147	Epilepsy
22	Paralysis, unqualified	148	
23	Unconsciousness, coma, unqualified	149	
24	Pregnancy with complications	151	Complicated pregnancy
25	Abortion	152	Abortion
26	Childbirth with complications	154	Complicated childbirth
27	Puerperium with complications	155	Complicated puerperium
28	Injured during birth by passage or manipulation	162	Birth injury
29	Small or premature baby	163	Immaturity
30	Weakness, loss of weight, anaemia, oedema, history of inadequate diet	170, 171	Malnutrition
31	Pain and swelling in joints or muscles	175	Arthritis, Rheumatism
32	Serious injuries	18	
33	Mild injuries	19	
34	Other specified causes of morbidity		

Other reasons for contact with the health service:-

35	Injection, vaccination	S11
36	Dressing of wounds	S13
37	Normal delivery	S14
38	Other procedures	S10, S12, S15
39	Maternal and child health consultation	S16
40	Family planning consultation	S17
41	Other consultation	S18
42	Other service	S19

External cause of injury:-

43	Bites or stings of venomous animals	E10
44	Burns	E11
45	Falls	E13
46	Poisoning	E14
47	Transport (traffic) accidents	E15
48	Other violence	E12, E16-E19

APPENDIX IIb

Diarrhea/Growth Study - Classification of Illness

Form Space D	No diarrhea	= 0
	Diarrhea - no dehydration	= 1
	Diarrhea - mild dehydration	= 2
	Diarrhea - mod. dehydration	= 3
	Diarrhea - severe dehydration	= 4
	Dysentery - no dehydration	= 5
	Dysentery - with dehydration	= 6
	Vomiting - no diarrhea	= 7
	Unknown	= 9
Form Space Dx	Measles	= 01
	Mumps	= 02
	Chickenpox	= 03
	"Viral" exanthem unknown etiology	= 04
	Scabies	= 05
	Impetigo	= 06
	Cellulitis	= 07
	Eczema	= 08
	Miscellaneous skin lesions	= 10
	URT Infection	= 11
	Conjunctivitis	= 12
	Otitis	= 13
	Whooping cough	= 14
	Tonsillitis	= 15
	Stomatitis	= 16

Diphtheria	= 17
Pneumonia	= 18
Bronchitis/croup	= 19
Asthma	= 20
Tuberculosis	= 21
Hepatitis	= 22
Meningitis	= 23
Tetanus	= 24
Malaria	= 25
Typhoid fever	= 26
Urinary tract infection	= 27
Unknown	= 99