

Nutritional Status Survey
7-10 Years aged school children in Ella provincial council
of
Badulla district

By

Deepika Sudarshini Bandara

Thesis submitted to the University of Sri Jayewardenepura as the partial fulfillment requirement for the award of the degree of Masters of Food Science and Technology.

Declaration

The work describe in this thesis was carried out by me under the supervision of Prof. Auther Bamunuarachchi and Dr. K.K.D.S. Ranaweera and a report on this thesis has not been submitted in whole or in part of any University or any institute for another degree.

.....25/03/2009.....
Date

.....Deepika.....
(D.M.D.S. Bandara)

We certify that the above statement made by the candidate is true and this thesis is suitable for submission to the University for the purpose of evaluation.



Prof. Auther Bamunuarachchi

Department of Food Science and Technology

University of Sri Jayawardenepura



Dr. K.K.D.S. Ranaweera

Head of the Department

Department of Food Science and Technology

University of Sri Jayawardenepura

Dedication

To my Loving

Farther and Mother

Contents

	Pages
Table of contents	i
List of Tables	v
List of Figures	vi
List of Figures of Appendix (iii - iv)	vii
Acknowledgement	viii
Abstract	ix

CHAPTER 01 – INTRODUCTION

1.1	Introduction	1
1.2	Background of the study	3
1.3	Map of the Study Area	4
1.4	Objectives of the Survey	5
1.5	Significance of the study	5
1.6	Limitation of the Study	5

CHAPTER 02- LITERATURE SURVEY

2.1	Nutrition	6
2.2	Food	7
2.2.1	Carbohydrates	7
2.2.2	Fats	8
2.2.3	Proteins	8
2.2.4	Minerals	8
2.2.5	Vitamins	9
2.3	Recommended Daily Allowances (RDA)	9
2.4	Nutritional Deficiencies and Disorders	10
2.4.1	Protein Energy malnutrition (PEM)	12
2.4.2	Anemia	12
2.4.3	Vitamin A deficiency	12
2.4.4	Iodine Deficiency disorders	13
2.5	Food Security	13
2.5.1	Household Food security	14
2.5.2	Sub-national food security	14
2.5.3	National food security	15
2.5.4	Global food security	15

2.6	Measurements of Nutritional Status (Anthropometry)	16
2.6.1	Weight-for-Height (WfH)	18
2.6.2	Height-for-Age (HfA)	19
2.6.3	Weight -for-Age (WfA)	20
2.6.4	Mid Upper Arm Circumference (MUAC)	21
2.7	Nutritional status in Sri Lanka.	22
2.8	Socio- economic factors of Sri Lanka	25
2.8.1	Human Development Index (HDI)	25
2.8.2	Gender Development Index (GDI)	26
2.8.3	Unemployment	26
2.8.4	Labour force	27
2.8.5	Poverty	27
2.8.6	Demographic trends	28
2.8.7	Social trends	29

CHAPTER 03 – METHODOLOGY

3.1.	Survey Methodology	31
3.1.1	Determination of sample size	31
3.1.2	Prepare the questionnaire	32
3.1.3	Anthropometry	33
3.1.4	Calculations	33
3.1.5	Statistical Analysis	33

CHAPTER 04 - RESULTS AND DISCUSSION	34
CHAPTER 05 – CONCLUSIONS	42
REFERENCES	43
Appendix i	45
Appendix ii	49
Appendix iii	50
Appendix iv	51

Lists of table

		Pages
Table 2.1	Recommended Dietary allowances for Sri Lankans- 2007 Dept. of nutrition, medical Research institute (MRI)	11
Table 2.2	Underweight, stunting and wasting en primary school children by age and gender (Sources: 2001; Anaemia Survey, MRI)	23
Table 2.3	Stunting .Wasting, and underweight n primary school children by zone, sector and Province (Sources: 2001; Anaemia Survey, MRI)	24
Table 2.4	Some Macro-economic indicators 2000-2003 Source: Economic & Social Statistics of Sri Lanka, 2004, Central Bank of Sri Lanka	25
Table 4.1	Distribution of nutritional status of 7-10 years age school children by education and occupational status of parents	38
Table 4.2	Distribution of nutritional status of 7-10 years age school children by socio- economic factors	39
Table 4.3	Daily intakes of selected nutrients of school children (7- 10 years age group) in three schools in Ella Provincial Council	41

Lists of Figures

	Pages
Figure 1.1 Map of the study area	4
Figure 4.1 Nutritional status of 7-10 age school children in three selected schools in Ella provincial council ,Badulla	34
Figure 4.2 Nutritional status of 7-10 age school children by ethnicity	35
Figure 4.3 Nutritional status of 7-10 age school children by gender	36
Figure 4.4 Nutritional status of 7-10 age school children by schools	40

List of Figures of Appendix (iii - iv)

	Pages
Appendix iii	
Figure iii Weight by height of boys 90-145 cm in height (WHO/NCHS)	50
Appendix iv	
Figure iv Weight by height of girls 90-137cm in height (WHO/NCHS)	51

Acknowledgement

I would like to express my sincere gratitude to my supervisors, Prof. A. Bamunuarachchi and Dr. K.K.D.S.Ranaweera for their guidance extended and constructive criticism through out the period of study to complete successfully.

I am very grateful to Dr.W.S.Fernando, Nutritional specialists, Medical Research Institute (MRI), for her guidance, encouragemenents and necessary arrangements to complete the study successfully

My sincere thanks to Principals, staff, School children in grade 3 and 4 and their parents in Naulla Madya maha Vidyalaya, Demodara, Gawerawela Vidyalaya, Gawerawela and Southum Tamil Madya maha Vidyalaya, Demodara,for spending their valuable time in collecting data.

I would like to express my special thanks to the Public Health Officer (MOH) and Midwife in Demodara and Gawerawela region for their kind support by providing essential medical reports and health situation of the area.

Finally, I wish to thanks all my friends in M.Sc. (Food Science and Technology), and all academic and non- academic staff for their support, encouragement throughout the study period.

Nutritional Status Survey

7-10 Years aged school children in Ella provincial council of Badulla district

By

Deepika Bandara

ABSTRACT

This survey was aimed to find out the Nutritional status of 7-10 years aged school children. To achieve that we selected three schools in two Grama Niladari Regions in Ella provincial council of Badulla district and the questionnaires were prepared in a well-structured manner to collect data on the socio economic and nutritional status. The survey was continued for three days in March 2008 and the standard food composition table prepared for Sri Lanka was used to calculate the individual nutrient intake.

About two hundred and thirty school children were selected to find the socio-economic status of their families and fifty were selected to assess their individual daily food intake.

According to the results obtained here about 20.87% of school children in 7-10 years age group were wasting, and 78.26% were normal in the selected population and mainly socio-economic factors were affected to their nutritional status. The monthly income of the family was not affected to the nutritional status of the family, while lack of good sound of nutritional knowledge of mothers is contributed to the poor nutritional status among the children.

CHAPTER 01

Introduction

1.1 Introduction

Child health and nutritional status is very important when considering development of a country, because some researches have argued that the poor childhood health leads to low academic outcomes and poor adult health, both of which subsequently reduce adult wages and labor productivity.

The Nutritional requirements are varies according to number of factors viz. Age, weight, Body activity, Climate, etc. and it also varies according to sociological, psychological, physiological, cultural and economic factors.

There is a total dynamic reaction between food nutrition and humans. Therefore the nutritional status can be determined by the results of these reactions. Nutrition status of young children is an indicator of poor food security. It can compare the proportion of children who are undernourished in different places and in the same place at different time. This tells planners and administrators when and where there are food security problems. If malnutrition increases, it suggests severe food shortage in and area.

Sri Lanka is a country that has made a progress in reducing both child mortality and undernourishment, although, some kind of nutrient deficiencies still cause negative impact to the society. Those nutrient deficiencies are;

- Protein-Energy malnutrition
- Iron Deficiency
- Iodine Deficiency
- Vitamin A Deficiency

Protein Energy Malnutrition (PEM) is one of the nutrition deficiencies of public health significance in many developing countries including Sri Lanka .Over the past few decades there has been a steady decline of the prevalence in Sri Lanka as a result of many interventions employed. Nevertheless, it continues to affects the vulnerable populations and is of considerable magnitude, especially in case of acute under nutrition (Piyasena . and Mahamithawa, 2001).

Food security is associated with food intake at the individual level and food availability at other levels. That is house hold, sub national, national and global level and the food security was affected by many factors; world population and growth rate, poverty, loss of land, physical access, war and political strife, grain and cereal production, nutritional quality of the diet, export crops and stored foods.

In this present research we are going to find the nutritional status of school children among 7-10 years group by Anthropometric measurement of weight-for-Height (wasting) and the nutritional quality of their diets.