

**IMPACT OF A NUTRITION EDUCATION PROGRAMME ON
NUTRITION KNOWLEDGE AND DIETARY INTAKE
PRACTICES OF PRIMARY SCHOOL CHILDREN IN
BOIPATONG**

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Magister Technologiae: FOOD SERVICE MANAGEMENT

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ABSTRACT

Inadequate food intake and unhygienic practices are usually associated with poor nutrition practices. Malnutrition stems from poor quality and quantity of foods, but is also contributed to by factors of inadequate maternal and child health care, lack of education and information and insufficient health services. The first phase of this study was to assess the nutritional status and nutritional knowledge of primary school children within a peri-urban community, through the implementation of a situational analysis. Validated 24-hour (hr) recall, food frequency (FFQ), nutrition knowledge and health questionnaires were used to conduct the situational analysis of this community. Parents (n=52) representative of 400 (13.0 percent) children voluntarily agreed to participate and 45 children completed the baseline survey. Results indicated a community faced with poverty as unemployment (60.9 percent) was high, education levels amongst the parents ranging between primary (33.3 percent) and secondary school (54.9 percent). The dietary patterns of the children revealed a carbohydrate-based diet with very few (n=2) consuming a variety of fruit and vegetables. Some nutrition knowledge amongst the children was evident, with a mean 60.2 percent in correct answers for the true/false questions. The children within the community were at risk of becoming stunted, with small numbers having deficiencies in iron. Therefore, it was decided to implement a nutrition education programme (NEP) in the second phase of the study to address malnutrition amongst primary school children.

The objectives of the second phase were 1) to implement a NEP amongst the primary school children to assess the impact on nutrition knowledge and dietary practice, and 2) to determine the retention of knowledge after nine months and whether any correlation occurred between knowledge and dietary practices. The school environment was chosen to ensure attendance and create a suitable learning environment to which the children were already accustomed. Two groups, namely experimental (n=82) and control

(n=91), were assigned for this study. The control group received no form of nutrition education during the intervention period. The experimental group received nine 45 minute lessons over a period of nine weeks. The nutrition education tools (NETs) were made up of a text and activity book, supplemented by a card and board game. Pre- and post-nutrition intervention knowledge and 24-hr recall questionnaires were completed to assess differences in nutrition knowledge and dietary practices between the two groups.

The intervention made a significant impact on the nutrition knowledge of the experimental group, with a 13 percent improvement between pre and post results. Topics which required more emphasis included the importance of variety in the diet, the functions and sources of certain nutrients, and the classification of certain food groups and the daily serving requirements. In the long-term evaluation, nutrition knowledge was retained and related to topics of the inclusion of milk and fat on a daily basis, the serving size of starch, dairy products and fruit and vegetables, and the classification of low-fat snack items. Retention of knowledge was poor for the source of vitamin C. A few changes were made in the dietary choices of the children after the intervention, with the inclusion of more carbohydrates and one fruit. During the long-term evaluation, the children included more protein sources, but carbohydrates remained dominant within the Top 20 list. The energy distribution in the long term changed towards more energy being supplied from protein (15.6 percent) and fat (34.4 percent), compared with post results of 13.7 and 25.8 percent respectively. The multivariate analysis revealed a significant correlation between the protein intake of the Top 20 list and the question relating to the number of eggs ($p=0.00$) to be consumed daily, as well as the link between vitamin C ($p=0.00$) and fruit and vegetable intake.

A limitation is that a small number of children ($n=27$) could not complete the post test, with another 34 children not present to complete the long-term evaluation. The children had very little control of the dietary patterns as their

mothers were primarily responsible for food procurement, preparation and feeding.

A recommendation is to commence the intervention in the beginning of the year and to consider a co-ordinated approach with parents to encourage dietary changes.

Keywords: poverty, children, nutrition knowledge, experimental, significance.

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GLOSSARY OF TERMS

ACOG	American College of Obstetricians and Gynecologists
AgBioForum	The Journal of Agrobiotechnology Management & Economics
BFHI	Baby-Friendly Hospital Initiative
BMI	Body Mass Index
Ca	Calcium
CAL	Computer Aided Learning
CFSAN	Centre for Food Safety and Applied Nutrition
CG	Control Group
CSL	Centre of Sustainable Livelihoods
DBSA	Development Bank South Africa
DC	District of Columbia
DDS	Dietary Diversity Score
DoE	Department of Education
DOH	Department of Health
DPAS	Global Strategy on Diet, Physical Activity and Health
DRA	Disaster Relief Agencies
ea	each
EAPRO	East Asia and Pacific Regional Office
EAR	Estimated Average Requirements
EER	Estimated Energy Requirement
EG	Experimental Group
ERP	Education for Rural People
FAO	Food and Agriculture Organisation
FAO UN	Food and Agriculture Organisation of the United Nations
FAO*	Food Aid Organisation
FAP	Food Aid Programmes
FBDGs	Food-Based Dietary Guidelines.
FDA	Food and Drug Administration
Fe	Iron
FFQ	Food Frequency Questionnaire
FGDS	Food Group Diversity Score
FMFH	Feeding Minds Fighting Hunger
FS	Free State
FSN Forum	Global Forum on Food Security and Nutrition Policies and Strategies
FTW	Finding the Teacher Within
FUEL	Fluids Used Effectively in Living
FVS	Food Variety Score
g	grams
HFSR	Healthy Food Slide Rule
hr	hour
ICDS	Integrated Child Development Services
IDA	Iron Deficiency Anaemia
IDD	Iodine Deficiency Disease
INP	Integrated Nutrition Programme
ILSI	International Life Science Institute

JNEB	Journal of Nutrition Education and Behaviour
Kg	Kilogram
Kg/m ²	Kilograms per square meter
kJ	Kilojoule
KZN	Kwa-Zulu Natal
m	metre
mg	milligrams
Mg	Magnesium
ml	millilitres
MDG	Millennium Development Goal
MM	Michigan Model
MND	Micronutrient Deficiency
MRC	Medical Research Council
NAP	The National Academic Press
NC	Northern Cape
NCD	Non-communicable Diseases
NCHS	National Centre for Health Statistics
NE	Nutrition Education
NEAPS	Nutrition Education at Primary School
NEIP	Nutrition Education Intervention Programmes
NEIR	Nutrition Education Intervention Research
NEP	Nutrition Education Programmes
NET	Nutrition Education Tools
NFCS	National Food Consumption Survey
NFCS-FB	National Food Consumption Survey – Fortification Baseline
NFSI	Nutrition-Friendly Schools Initiative
NICUS	Nutrition Information Centre
NIP	Nutrition Intervention Programme
NIRU	Nutrition Intervention Research Unit
NPF	National Programming Framework
PAL	Physical Activity Level
PEM	Protein-Energy Malnutrition
PFBGDs	Paediatric Food-Based Dietary Guidelines
SA FBDG	South African Food Based Dietary Guidelines
SA	South Africa
SADHS	South African Demographic and Health Survey
SAJCN	South African Journal of Clinical Nutrition
SANPAD	South Africa Netherlands Research Programme on Alternatives in Development
SB	School Based
SBNE	School-Based Nutrition Education
SD	Standard Deviation
SDD	Sustainable Development Department
Se	Selenium
TALC	Teaching Aids at Low Cost
TOCHP	The Ottawa Charter for Healthy Promotion
TV	Television

UI	Urinary Iodine
UK	United Kingdom
UN	United Nations
UNICEF	United Nations Children's Fund
UNMD	United Nations Millennium Declaration
UNPD	United Nations Population Division
UNSD	United Nations Statistics Division
US	Unites States
USA	United States of America
USDA	United States Department of Agriculture
VAD	Vitamin A deficiency
Vit.	Vitamin
VUT	Vaal University of Technology
WFP	World Food Program
WHES	World Hunger Education Service
WHO	World Health Organization
WIC	Woman, Infant and Child
Zn	Zinc
μg	micrograms