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Social, economic, health and environmental determinants of child nutritional status in three Central Asian Republics

A Thesis submitted in partial fulfilment of the requirements of the Degree of Doctorate of Philosophy (DPhil) in Sociology with specialization in Demography

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by

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ABSTRACT

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This study highlights the importance of national factors in explaining the wide variations in child malnutrition that exists among population groups in the three Central Asian Republics under study, and as an avenue through which the investigation of the processes by which other factors influencing child malnutrition can be executed. This study has been guided by the proposition that the effects of socio-economic, health and the environmental factors vary by province of residence. The suggested theory underlying this proposition is the *structural violence theory,* which stems from the evidence of differences in malnutrition levels among provinces of residence within the three countries under study.

Against the background of this theory, the study explores and compares the effects, on child malnutrition of sixteen covariates of malnutrition within these countries. The study assessed, first, the nutritional status of children below 3 years using the three anthropometric indices, weight-for-age, height-for-age and weight-for-height. Secondly, it examined the confounding factors that influence nutritional status in the Central Asian Republics.

The DHS data for Kazakhstan, Kyrgyzstan and Uzbekistan were used. The data of the countries were combined in order to create a more usable dataset for multivariate analyses. This descriptive analysis was done on all relevant variables in order to get a better understanding of the dynamics involved in the data. A binary logistic regression analysis estimating models using the stepwise forward method (based on Wald statistics) on the pooled dataset was carried out controlling socio-economic, health and environmental characteristics. Separate analysis was carried out to study the odds of being underweight, and stunted

among children in the study population. Analyses for the odds of being wasted were not performed because the percentage of wasted children was too low.

The main results indicate that province of residence within a country, country of residence, number of people in a household, household wealth, birth weight, age of child, knowledge of ORT, maternal education, number of children under five years, and source of drinking water, are strong predictors of child nutritional status in the three Central Asian Republics. Furthermore, it has revealed that chronic malnutrition (stunting), which is long-term undernutrition, is most prevalent in all three countries but at varied levels.

An unexpected finding is that fully vaccinated children were highly likely to be malnourished compared to children who were partially vaccinated. Since stunting appears in early ages in Central Asian children many of the children in this study may be stunted before they receive all the recommended vaccinations. This could also be influenced by the poor nutritional status of the mother who cannot provide nutritious breast milk.

Another unexpected finding was that breast-feeding especially in children more than six months old had a strong negative association with stunting and underweight. Women who breastfeed longer may be doing so because they lack the resources and nutritional knowledge to provide their children with adequate nutrition. Another explanation for the observed adverse association of breastfeeding and nutritional status beyond infancy is that of reverse causality, where mothers continue to breastfeed children who appear small for their age.

In summary, the results from both the descriptive and binary logistic regression analysis are similar in terms of the explanatory variables and the statistical significance in the models. The study recommends more area-specific (province) policies for the development of nutritional intervention programmes including closer attention to childcare and mother care programmes.

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DEDICATION

I dedicate this thesis to the late Professor Kobus Oosthuizen for introducing me to the field of Demography without whom I would not developed the love and interest that I have for the subject today.

ABBREVIATIONS AND NON-ENGLISH TERMS

ADB	Asian Development Bank
AED	Academy for Educational Development
ARI	Acute Respiratory Infection
BMI	Body mass Index
CA	Central Asia
CARs	Central Asian Republics
CDC	Centres for Disease Control
CIS	Commonwealth of Independent States
DHS	Demographic and Health Surveys
EUI	European University Institute
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization
FSU	Former Soviet Union
GDP	Gross Domestic Product
GNP	Gross National Product
GOSKOMSTAT	State Committee on Statistics
HAZ	Height-for-Age Z-score
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HTA	Height-for-Age
IMF	International Monetary Fund
IMR	Infant Mortality Rate
IUGR	Intra Uterine Growth Retardation
KADHS	Kazakhstan Demographic and Health Survey
KHDHS	Kyrgyzstan Demographic and Health Survey
LDCs	Less Developed Countries
LSMS	Living Standards Measurement Survey
NCHS	National Centre for Health Statistics
ORT	Oral Rehydration Therapy

Oblast	Province
PSU	Primary Sampling Unit
Raion	District
SES	Socio-Economic Status
SOE	State Owned Enterprise
SU	Soviet Union
TFR	Total fertility Rate
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNICEF	United Nations Children's Fund
USA	United States of America
USAID	United States Agency for International Development
USSR	Union of Soviet Socialist Republics
UZDHS	Uzbekistan Demographic and Health Survey
WAZ	Weight-for-Age Z-score
WFS	World Food Summit
WHO	World Health organization
WHT	Weight-for-Height
WHZ	Weight-for-Height Z-score
WTA	Weight-for-Age

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El'tsin Resignation Statement

"I want to ask you for forgiveness, because many of our dreams have not been realised, because what we thought would be easy turned out to be painfully difficult. I ask for forgiveness for not fulfilling some hopes of those people who believed that we would be able to jump from the grey, stagnating, totalitarian past into a bright, rich and civilised future in one go. I myself believed in this. It seemed that with one spurt we would overcome everything. It could not be done in one swoop. In some aspects I have been too naïve. Some of the problems were too complex. We struggled on through mistakes and failures. In this complicated time many people experienced shocks" (B.N. El'tsin, Russian President, 1991-1999, resignation statement, 31 December 1999). Ellman M. (2000). The Russian Economy Under El'tsin. Europe-Asia Studies (52):1417-1432.