

Monitoring Child Disability in Developing Countries

Results from the Multiple Indicator Cluster Surveys



Copyright © 2008 by the United Nations Children’s Fund Division of Policy and Practice

ISBN: 978-92-806-4407-4

Photo credits on cover: (right to left: © UNICEF/HQ06-0811/Shehzad Noorani;
© UNICEF/HQ04-0981/Giacomo Pirozzi; © UNICEF/HQ06-0135/Tom Pietrasik)

The United Nations Children’s Fund (UNICEF) welcomes requests for permission to reproduce or translate its publications—whether for sale or for non-commercial distribution. Applications and enquiries should be addressed to UNICEF, Division of Policy and Practice, 3 United Nations Plaza, New York, New York 10017, USA.

This joint report reflects the activities of individual agencies around an issue of common concern. The principles and policies of each agency are governed by the relevant decisions of its governing body. Each agency implements the interventions described in this document in accordance with these principles and policies and within the scope of its mandate.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of UNICEF or the University of Wisconsin concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

All reasonable precautions have been taken by UNICEF and the University of Wisconsin to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall UNICEF be liable for damages arising from its use.

United Nations Children’s Fund
Division of Policy and Practice
3 UN Plaza
New York, New York 10017, USA

University of Wisconsin
School of Medicine and Public Health
Department of Population Health Sciences
610 Walnut Street, Madison, WI 53726

Acknowledgements

Many individuals and organizations contributed to the success of this project. The collection of data on child disability across a broad range of countries was only possible due to the incorporation of the Ten Questions child disability module in the Multiple Indicator Cluster Survey (MICS), the contributions of the staff that assisted with data collection, and the survey respondents who were willing to share personal information for the benefit of children worldwide.

This report is the result of a collaboration between the Statistics and Monitoring Section of UNICEF New York and the University of Wisconsin—Madison. Maureen Durkin, Carissa Gottlieb, and Matthew Maenner (Department of Population Health Sciences, University of Wisconsin School of Medicine and Public Health) were primarily responsible for the data analysis, interpretation, and writing of this document. Claudia Cappa and Edilberto Loaiza (Statistics and Monitoring Section, UNICEF NY) coordinated the study and contributed to the overall realization of the project. Diakhate Ngagne (Statistics and Monitoring Section, UNICEF NY) provided support for the data processing and tabulations. Valuable insights and comments were provided by Mandana Arabi (Nutrition Section, UNICEF NY), Attila Hancioglu and Xiaodong Cai (Statistics and Monitoring Section, UNICEF NY), Alexandra Yuster and Helen Schulte (Child Protection Section, UNICEF NY), and Yuko Nonoyama (Early Childhood Development Section, UNICEF NY). Responsibility for any errors in this publication remains with the authors of the publication.

The Statistics and Monitoring Section of UNICEF gratefully acknowledges the support provided by Liza Barrie (Civil Society Partnerships Section of UNICEF) and Peter Crowley (formerly with the Civil Society Partnerships Section) in mobilizing the necessary funds for the realization of the study.

This document was edited by Mary Ellen Schutz of Gentle Editing, LLC, Madison, Wisconsin, USA. Graphic design by Media Solutions, University of Wisconsin School of Medicine and Public Health.

Contents

Foreword	vi
List of Tables.....	vii
List of Figures.....	viii
Executive Summary	1
Commonly used acronyms and key terms	2
Major categories of Child Disabilities and selected examples.....	3
I. Introduction to the issue of child disability	4
Overview.....	5
Defining and measuring child disability	6
Defining disability	6
Child disabilities.....	7
Measuring disability in children	8
The Ten Questions (TQ) screen for child disability.....	9
Previous studies of child disability using the TQ	10
II. MICS3 overview	12
III. Data analysis	16
IV. Results	18
The TQ Disability Module as a measure of child disability in MICS3	19
Survey completion.....	20
Data quality	21
Overall results from the child disability module	22
Variation across countries	22
Disability and indicators of development.....	23
Human Development Index	24
Under-five mortality.....	25
Variation within countries.....	26
Variation by ethnicity	26
The case of Serbia (Roma).....	27
The case of Belize (Indigenous Maya).....	27
Variation by region	28
The case of Sierra Leone.....	28
The case of Belize	28
Variation by sociodemographic characteristics	29
Gender and disability	29
Age and disability.....	30
Place of residence and disability.....	32

Evidence of associated factors.....	33
Education and disability.....	33
Early learning activities and interactions with parents.....	33
Current school attendance and disability	34
Parental education	36
Maternal education	36
Paternal education.....	39
Family wealth and disability.....	40
Child discipline and disability	41
Nutrition and disability	42
Breastfeeding.....	42
Vitamin A supplements.....	44
Vitamin A and vision.....	45
Iodized salt.....	46
Stunting.....	47
Underweight.....	48
Nutrition variables summary	50
Multivariate analysis: the case of Bangladesh.....	51
V. Limitations of this study.....	54
VI. Key findings and recommendations	56
Key findings.....	57
Recommendations.....	58
VII. References cited	60
VIII. Annexes.....	64
A. MICS3 Disability Module: Ten Questions (TQ) screen for child disability	65
B. Comments on data management & manipulations	65
C. Comparison of MICS2 and MICS3 results	66
D. Comparison between preliminary MICS3 child disability results and this report.....	67
E. Disability Module screening results overall and by specific items.....	68
F. Sum number of items of the Disability Module to which children screened positive.....	69
G. Disability Module screening results by gender	70
H. Disability Module screening results by age group.....	70
I. Disability Module screening results by participation in early learning activities.....	71
J. Paternal education – additional figures.....	72
K. Disability Module screening results by wealth quintile	73
L. Disability Module screening results by nutrition status: stunting and underweight.....	74

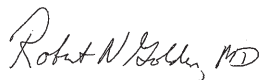
Foreword

Recent decades have seen steady and encouraging improvements in infant and child survival throughout much of the world. With these improvements, it is now possible to broaden our attention beyond survival to include the quality of life and function of children who survive. Many children survive to face the prospect of long-term functional limitations, including intellectual, learning, vision, hearing, and neurological disabilities. Unfortunately, these children might be more vulnerable to abuse, exploitation, neglect and discrimination. They may face reduced social participation and have less access to education and other social services than children without disabilities.

Little is known about the risk factors and the living conditions associated with childhood disability worldwide. The inclusion of a measure of childhood disability in the Multiple Indicator Cluster Survey (MICS) is one of the first efforts to address the issue of child disability across multiple countries.

The ultimate goal of this publication is to raise awareness and thereby both prevent new cases of child disability when that is possible and ensure protection and inclusion for children with disabilities. The findings presented in this publication provide decision-makers with basic information from a number of diverse countries that can be used to determine priorities related to child disability, including the prevention of childhood disabilities, the early detection of disorders leading to disability, and the timely provision of medical-rehabilitation services and comprehensive support to families with children with disabilities.

We hope that this report will lead to improved global awareness and collaboration to improve the quality of life of all children.



Robert Golden, MD
Dean, UW School of Medicine and Public Health
Vice Chancellor for Medical Affairs
Professor of Psychiatry
University of Wisconsin, Madison



Tessa Wardlaw
Chief, Statistics and Monitoring Section
Division of Policy and Practice,
UNICEF

List of Tables

Table 1. Demographic characteristics of children ages 2–9 years screened using the Disability Module in MICS3, by country.

Table 2. Percentage of disability modules administered that were completed in participating countries.

Table 3. Cronbach’s alpha scores for correlation between the ten questions of the Disability Module.

Table 4. Percentage of children ages 6–9 years currently attending school overall, and by Disability Module screening status.

Table 5. Percentage of children ages 2–9 years screening positive to the Disability Module by family wealth among the wealthiest 40% and remaining 60% of households.

Table 6. The ratio of the odds of screening positive for visual impairment among those who did not, compared with those who did, receive vitamin A supplementation.

Table 7. Multivariate logistic regression results from Bangladesh.

Table 8. Comparison of the percent of children screening positive to the Disability Module in MICS2 and MICS3 in countries common to both surveys.

Table 9. Preliminary results of the percentage of children ages 2–9 years screening positive to the Disability Module, by country.

Table 10. Percentage of children ages 2–9 years screening positive to the Disability Module overall and to each item, by country.

Table 11. Percentage of children ages 2–9 years screening positive to a sum of 0–10 items of the Disability Module, by country.

Table 12. Percentage of children ages 2–9 years screening positive to the Disability Module by gender, by country.

Table 13. Percentage of children ages 2–9 years screening positive to the Disability Module by age group, by country.

Table 14. Percentage of children ages 2–4 years screening positive to the Disability Module by participation in early learning activities, by country.

Table 15. Percentage of children ages 2–9 years screening positive to the Disability Module by wealth quintile.

Table 16. Percentage of children ages 2–4 years screening positive to the Disability Module by severity of stunting.

Table 17. Percentage of children ages 2–4 years screening positive to the Disability Module by severity of underweight.

List of Figures

Figure 1. Map of countries participating in the MICS3, 2005–2008.

Figure 2. Percentage of all children ages 2–9 years screening positive to the Disability Module, by country (95% confidence intervals).

Figure 3. Scatterplot of country-level Human Development Index score vs. percentage of children ages 2–9 years screening positive to the Disability Module.

Figure 4. Scatterplot of country-level Under-five mortality rate (per 1000 live births) vs. percentage of children ages 2–9 years screening positive to the Disability Module.

Figure 5. Percentage of children ages 2–9 years screening positive to the Disability Module in different ethnic groups in Serbia and Belize (95% CI).

Figure 6. Variation in the percentage of children ages 2–9 years screening positive to the Disability Module by region in Sierra Leone.

Figure 7. Variation in the percentage of children ages 2–9 years screening positive to the Disability Module by region in Belize.

Figure 8. Percentage of children ages 2–9 years screening positive to the Disability Module by gender, by country.

Figure 9. Percentage of children ages 2–9 years screening positive to the Disability Module by age group, by country.

Figure 10. Percentage of children ages 2–9 years screening positive to the Disability Module by place of residence, by country.

Figure 11. Percentage of children ages 2–4 years screening positive to the Disability Module by participation in early learning activities, by country.

Figure 12. Percentage of children ages 2–9 years screening positive to the Disability Module by maternal education, selected countries.

Figure 13. Percentage of children ages 2–9 years screening positive to the Disability Module by maternal education, selected countries.

Figure 14. Percentage of children ages 2–9 years screening positive to the Disability Module by maternal education, selected countries.

Figure 15. Percentage of children ages 2–9 years screening positive to the Disability Module by paternal education, selected countries.

Figure 16. Percentage of children ages 2–9 years receiving severe physical discipline by Disability Module screening status, by country.

Figure 17. Percentage of children ages 2–4 years screening positive to the Disability Module by breastfeeding status, by country (95% CI).

Figure 18. Percentage of children ages 2–4 years screening positive to the Disability Module by vitamin A supplementation status, by country.

Figure 19. Percentage of children ages 2–9 years screening positive to the Disability Module by household salt iodization test results, by country.

Figure 20. Percentage of children ages 2–4 years screening positive to the Disability Module by severity of stunting, by country.

Figure 21. Percentage of children ages 2–4 years screening positive to the Disability Module by severity of underweight, by country.

Figure 22. Percentage of children ages 2–9 years screening positive to the Disability Module by paternal education, selected countries.

Figure 23. Percentage of children ages 2–9 years screening positive to the Disability Module by paternal education, selected countries.

Executive Summary

With recent improvements in child survival in many countries, and the adoption and entering into force of the United Nations Convention on the Rights of Persons with Disabilities, disability is moving up on the international agenda. The development and inclusion of children with disabilities is a UNICEF priority. The *World Fit for Children* presents, among others, the UNICEF goal to “Ensure the full and equal enjoyment of all human rights and fundamental freedoms, including equal access to health, education and recreational services, by children with disabilities and children with special needs, ensure the recognition of their dignity, promote their self-reliance, and facilitate their active participation in the community.”

Despite the global interest in child disability, relatively little is known about the situation of children with disabilities, particularly in developing countries. As a first step toward addressing this paucity of information, UNICEF recommended inclusion of a disability module, the Ten Questions screen for child disability, in its Multiple Indicator Cluster Survey (MICS). Twenty-six of the 50 countries that participated in the third round of MICS, administered in 2005–2008, included this optional Child Disability module. Results from 20 of these countries are reviewed in this report. MICS is one of the first surveys to use a single screen for disability across a wide range of countries. The results of this landmark survey have the potential to raise awareness about the number and situation of children with disabilities in developing countries.

The Ten Questions screen was designed as a tool for screening children for disability and referring those in need for clinical evaluations. As the MICS Disability Module, it identifies children at increased risk for disability. Unfortunately, many countries lack the resources to provide comprehensive, diagnostic evaluations of children screening positive to determine their specific medical, rehabilitation, and educational needs. With improvements in knowledge and awareness, we are hopeful that the necessary resources to provide services for children with disabilities will be marshalled in the future.

During the 2005–08 round of the MICS, the Disability Module was administered in 19 different languages to over 200,000 children across 20 participating countries. Completion rates for the survey were above 79% for all countries and above 92% in 19 of the 20 countries. Data quality evaluations concluded that the ten questions of the Disability Module are internally reliable. Taken together these results indicate it is feasible to identify and estimate the number of children who are at increased risk for disability using the Ten Questions Disability Module in household surveys such as the MICS.

Between 14% and 35% of children screened positive to the Disability Module in most of the participating countries, though results were outside that range in a few countries. At the country-level, there does not appear to be an association between the percentage of children screening positive to the Disability Module and a country’s Human Development Index score. There is, however, a moderate positive correlation between Disability Module results and under-five mortality at the country level. These results indicate that the child Disability Module provides information about the situation of children beyond what can be learned through these indicators of country development and child mortality alone.

In addition, important within-country variation was noted in several instances. For example, analysis of data from selected countries revealed that children of ethnic minority groups were significantly more likely to screen positive for increased risk of disability. There also is evidence of substantial regional variation in the percentage of children who screened positive to the Disability Module within countries.

Executive Summary

Children with disabilities may be more likely to face discrimination and restricted access to social services, including education. In many countries, children screening positive to the disability module participated in fewer early learning activities, but were only slightly less likely to attend school. Family resources and socioeconomic conditions were associated with child disability screening results. Children from the poorest 60% of households were frequently more likely to be at risk for disability than those from the wealthiest 40% of homes. Children with increased risk for disabilities also appear to be more likely to face harsher discipline. Parents of children who screened positive for disability were significantly more likely to report using severe physical punishment in seven of the 15 countries providing discipline data, while children screening negative were reported to be more likely to receive physical punishment in two of the 15 countries. These results warrant further investigation into this important issue.

The link between nutrition and child development has been well documented. We found several nutrition variables were associated with screening positive for child disability. The percentage of children screening positive to the Disability Module was larger with increasing severity of stunting and underweight. In contrast, children who were ever breastfed or who received vitamin A supplementation screened positive less frequently than their peers who had not breastfed or received vitamin A supplementation. These findings point to the important link between child disability and nutrition, and an important target for interventions to prevent disability and improve quality of life of children with disabilities.

Understanding which factors are most strongly associated with increased risk of disability can provide us with additional information about where to target interventions to prevent future cases of child disability and support the inclusion of children with disabilities. To demonstrate the type of future analyses that could be conducted to address such questions, a multivariate analysis was conducted using data from one country. Results indicate that nutrition variables (breastfeeding and vitamin A supplementation) are significantly associated with reduced risk for disability after controlling for other factors.

This report substantially augments what is known about children with disabilities in developing countries, and suggests that large numbers of children across the world are at increased risk of disability. Future data collection efforts would benefit greatly from clinical and diagnostic evaluations for selected children based on their screening results and available resources. In keeping with UNICEF's priority to protect and ensure the rights of all children, future monitoring efforts should include information about exclusion and other discrimination experienced by children with disabilities. Policies to address the needs of disabled children should be among the top priorities for global leaders.

Commonly used acronyms and key terms

Commonly used acronyms

CI	Confidence Interval
ICF	International Classification of Functioning, Disability, and Health
MICS	Multiple Indicator Cluster Survey
MICS3	Multiple Indicator Cluster Survey, round 3 (data collected in 2005-2008)
TQ	Ten Questions screen for child disability
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Key terms used in this publication

Child disability (synonymous with developmental disability): limitations in mental and/or physical function relative to age-specific norms that become apparent prenatally, perinatally or during infancy, childhood, or adolescence. Child disabilities can affect one or more functional domains, including: cognition, movement, consciousness, language, speech, vision, hearing, and behavior. Developmental disabilities encompass a range of disabilities including genetic and acquired disabilities (such as those resulting from an injury).

At increased risk for disability: In this publication, we consider the results of the Ten Questions screen for childhood disability (TQ) as an indicator of increased risk for childhood disability. Not all children who screen positive to the TQ will be diagnosed with a disability upon clinical evaluation. However, those who screen positive are more likely than those who screen negative to have a disability and are at increased risk for disability.

Incidence: The rate at which new cases of a condition occur in a defined population during a specific time frame.

Prevalence: The proportion of a population, per 1000 people, with a condition at a given time. For example, the prevalence of child disability is the proportion of children in a population that are found to have a disability.

Major categories of Child Disabilities and selected examples

The term child disability is used broadly within this report to refer to disabilities that occur in any of the following domains. This table presents information about several major categories of child disabilities, and selected examples of disabilities within each category.

Major categories	Selected examples
Cognitive / Intellectual	<ul style="list-style-type: none">• Intellectual impairment• Learning disabilities
Vision	<ul style="list-style-type: none">• Partially sighted• Low vision• Night blindness
Hearing	<ul style="list-style-type: none">• Deafness• Hearing impaired
Motor	<ul style="list-style-type: none">• Cerebral palsy• Loss of limb(s)• Paralysis (post polio; spinal cord or traumatic injury)
Epilepsy / Seizure	<ul style="list-style-type: none">• Idiopathic epilepsy• Neurocysticercosis• Generalized seizures
Speech / Language	<ul style="list-style-type: none">• Stuttering• Articulation and phonemic disorders• Dyslexia and other language processing disorders
Behavioral and Other*	<ul style="list-style-type: none">• Autism• Attention Deficit Hyperactivity Disorder (ADHD)• Emotional disorders• Anxiety disorders (such as obsessive-compulsive disorder)• Mood disorders

* Note: The TQ Disability Module was not designed to necessarily detect behavioral and mental health disorders.