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# Epidemiology of child psychiatric disorders in Addis Ababa, Ethiopia

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*To all African adults who are able to realise that promoting the mental and social wellbeing of today's children means promoting the mental and social wellbeing of tomorrow's society*

## ABSTRACT

Although mental disorders are common among children all over the world, information on the extent and types of child psychiatric disorders in Ethiopia is extremely limited. A study was conducted in an urban setting of Ethiopia to look at the prevalence of child psychiatric disorders and their correlates. A two-phase survey was performed. In the first phase, parents of 5000 children in Addis Ababa, the capital city of Ethiopia, were interviewed using the Reporting Questionnaire for Children (RQC). In the second phase, parents of all screen-positive children (n=864) and parents of 1537 screen-negative children were interviewed using the revised parent version of the Diagnostic Interview for Children and Adolescents (DICA-R), a semi-structured diagnostic instrument that is based on the third revised edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-III-R). This thesis discusses the results of that study in comparison with other child mental health studies in Ethiopia and elsewhere.

At the recommended cut-off score of 1, the sensitivity, specificity, predictive values and likelihood ratios of the RQC to DICA-R diagnoses were acceptable. The RQC had high accuracy with a misclassification rate of 17%.

The weighted prevalence for any DSM-III-R diagnosis was 17%. The most prevalent condition was enuresis (12.1%) followed by simple phobia (5.5%). The prevalence rates of all other identified conditions were below 1%. Children's age, severe economic problems, and single parenthood were found to be risk factors for any DSM-III-R diagnosis in children. Male sex, younger age, and lower achieved educational grade of the child were all independently associated with childhood enuresis. The odds of having enuresis were significantly higher for children in families with extreme poverty and in children from single-parent homes. The risk of having enuresis was significantly higher in children who had anxiety disorders (AD) and disruptive behaviour disorders (DBD). Sex was significantly associated with disruptive behaviour disorders while grade level, age, family size, ethnicity, poverty, and single parenthood were not. Anxiety disorders were significantly associated with sex, ethnicity, and extreme poverty but not with the other socio-demographic variables. The absence of mood disorders and somatoform disorders, of which symptoms are often encountered in both children and adults at clinical settings and the low prevalence rates of most identified conditions, were probably related to the lack of awareness or alternative explanations at the community level regarding the understanding of behaviour changes. Campaigns of public mental health education with the aim of providing scientific information to society are highly recommended. While Ethiopia works towards mainstreaming mental health into its health care system, training health care workers in applying simple screening tools like the RQC is recommended.

**Key words**: Children, Developing country, Psychopathology, Correlates

## LIST OF PUBLICATIONS

This thesis is based on the following papers, which will be referred to in the text by their Roman numerals. Reprints of original papers were made with approval from the publishers.

Paper I    The Reporting Questionnaire for Children (RQC) as a valid and simple child mental health screening instrument in Ethiopia. Desta M, Hägglöf B, Kebede D, Alem A, Stenlund H. Submitted to European Child & Adolescent Psychiatry.

PAPER II    Psychiatric disorders in urban children in Ethiopia: a population based cross sectional survey. Desta M, Kebede D, Hägglöf B, Alem A. Submitted to Social Psychiatry and Psychiatric Epidemiology.

PAPER III    Socio-demographic and psychopathologic correlates of enuresis in urban Ethiopian children. Desta M, Hägglöf B, Kebede D, Alem A. Acta Paediatrica 96:556-560, 2007.

PAPER IV    Demographic and social factors associated with disruptive behaviour disorders and anxiety disorders in children in an urban community in Ethiopia. Desta M, Hägglöf B, Kebede D, Alem A, Stenlund H. Submitted to Nordic Journal of Psychiatry.

## ABBREVIATIONS

| | |
|---|---|
| AD | Anxiety disorder |
| CBCL | Child behaviour checklist |
| CSA | Central statistics agency |
| DBD | Disruptive behaviour disorders |
| DHSS | Demographic and health statistics survey |
| DICA | Diagnostic interview for children and adolescents |
| DICA-R | Diagnostic interview for children and adolescents, revised |
| DSM-III-R | Diagnostic and statistical manual of mental disorders, third edition, revised |
| HEP | Health extension package |
| HEW | Health extension worker |
| HI subscale | Hyperactivity inattention subscale |
| HSDP | Health sector development plan |
| ICD | International classification of diseases |
| PTSD | Posttraumatic stress disorders |
| ROC | Receiver operating characteristic |
| RQC | Reporting questionnaire for children |
| SDQ | Strengths and difficulties questionnaire |
| WHO | World health organization |

# CONTENTS

## 1 PREAMBLE

Although policy makers are becoming more aware of importance of mental health, the majority of the population in Ethiopia appears to still harbour traditional notions regarding the causation and treatment of behaviour or mental disorders. When it comes to child behaviour and mental disorders, the lack of awareness appears all encompassing. Consequently, child psychiatric services are absent from the health care system of the country.

A survey of the prevalence of child behavioural and mental disorders was conducted in a rural setting in the late 1990s. The results of that survey showed a prevalence rate of 3.5% for any one DSM-III-R disorder (Ashenafi et al. 2001). We felt that the findings from that rural study would not be adequate to make a judgement about the prevalence of disorders at the national level. Therefore, in order to have a better estimate of the extent of childhood behavioural disorders at a national level, we decided to conduct a similar study in an urban setting of the country. Following this decision, between 2002-2003 we did a survey of the prevalence of mental and behavioural disorders among urban children in Ethiopia. The results were mostly similar to the ones from the rural study. This dissertation elaborates on the findings of the survey of randomly selected children using for the first time in Ethiopia a structured instrument based on an internationally accepted diagnostic nomenclature.

## 2 BACKGROUND

### 2.1 Briefly about the demography, history and economy of Ethiopia

Ethiopia is an old nation located in the horn of Africa. The country occupies most of the horn and covers an area of over 1 million square kilometres. The country has been a land-locked state since the mid 1990s. It shares borders with Sudan, Eritrea, Djibouti, Somalia, and Kenya. The major topographic features are a massive highland complex of mountains (the highest of which, at 4620 meters above sea level, is Ras Dashen Mountain in the north) and plateaus divided by the Great Rift Valley and surrounded by lowlands along the periphery (the lowest of which, at 125 meters below sea level, is the Dalol Depression in the North-East). Administratively, the country is currently divided into 12000 rural and 5000 urban communes called kebeles, the lowest administrative unit.

Most people think of Ethiopia as a tropical climate due to its proximity to the equator. However, this is not the case; most of the country's land mass is above 1500 meters. The topographic diversity of the terrain has made regional variations in climate, natural vegetation, soil composition, and settlement patterns. Thus the country has extremely varied climatic conditions from warm to cool in the highlands where most of the population lives, to one of the hottest places on earth at the Dalol Depression, where the temperature is about 50°C. The rainy season lasts from mid-June to mid-September (longer in the southern highlands). The rainy season is preceded by intermittent showers from February or March. The weather is dry during the remainder of the year.

Originally called Abyssinia by the West, Ethiopia is historically Sub-Saharan Africa's oldest nation with a history that goes back 3000 years. Until two centuries ago, the country was an amalgamation of chiefdoms that were administered by their respective regional kings who paid allegiance to a superpower king, the 'King of Kings'. Until 1974, the country was brought under one administrative system through the rule of successive kings. The Feudal system ended in 1974 after a nationwide revolution led to the fall of the last emperor (Haileselassie I) who was replaced by a communist military junta. The harsh rule of the communist military regime, the concomitant wide-spread resistance and the frequent drought for the following 17 years resulted in unprecedented economic and social deterioration. In 1991, the communist military regime was overthrown and replaced by the current regime. From the mid 1960s through the early 1990s, the country had been under a state of continuous social violence. The changes of systems from monarchy to military state and from the military state to civil state were also laden with violence. Although relatively calmer, the time since the 1990s has also been characterized by social violence.

The estimated current population is 77 million (Central Statistical Agency [Ethiopia] and ORC Macro USA 2006). The country is home to diverse cultures with 80 language groups. Eighty-four percent of the population is rural. Ethiopia has its own alphabet called Ge'ez, the only one of its kind in Sub-Saharan Africa. However, the majority of Ethiopians (55%) are illiterate. Over half of the population is aged less than 18 years. Christianity (60%) and Islam (33%) are the major religions (Central Statistical Agency [Ethiopia] and ORC Macro USA 2006).

Despite being the oldest Sub-Saharan State, Ethiopia's history has been laden with continuous natural disasters and frequent civil strife, violence that was most apparent during the communist rule. This situation has led to the stagnation of economic development, making the country one of the poorest in the world's poorest continent. The economy depends on agriculture, which in turn relies on natural rain, making harvests unpredictable. Because of these factors, the country, while owning huge idle arable land amounting to 12% of the total land area (Food and Agriculture Organization 2001), remains dependent on donations to feed its people.

There has been some improvement in the economy over the last decade. The GDP has been showing improvements for successive years and the high poverty incidence has shown decline lately. Although these improvements are encouraging, the nation still remains significantly behind even among the poor African nations because of its extremely deteriorated state. According to the report of the World Bank (The World Bank 2005), Ethiopia's per capita GDP - $160 (US) - is less than a quarter of the Sub-Saharan Africa's (SSA) average. The World Bank stresses that Ethiopia is a long way from achieving the Millennium Development Goals (MDGs) by 2015 because of the country's very low starting point.

## 2.2 The nation's health situation

Like the economy, recently the health situation in the country has improved. There has been expansion of coverage and change has been reported over the past several years in some of the health and health related indicators. From 2002 to 2007, there has been a decline in the infant mortality rate, the under five mortality rate, and maternal mortality rate. During the same period, there has been an increase in the health service coverage, the immunization coverage, access to clean water, latrine usage, literacy rate and access to electricity. On the other hand, life expectancy for both sexes has not shown any change during the past five year period (Ministry of Health of Ethiopia 2005/2006).

There also has been an increase in the number of health care facilities during the above 5-year period. The number of hospitals, health centres, private clinics, and health posts has increased. There has been over 50% reduction in

the number of health stations during the same period. According to the previous tier of the health care system, the health station was the centre of the primary health care unit. This focus has been given to the health centre according to the current health care strategy. As a result, the health stations have been upgraded to health centres in many parts of the country. The health manpower is also another health resource that has increased in the past five years. The number of physicians, health officers and nurses has all grown. Recently, there are fewer physicians than the number of graduates because of migration of that group to other African, Asian, and western countries in search of better living conditions. Health extension workers (HEW), a new group of professionals assigned in health posts throughout the country since 2003, has also increased. The number of health assistants, the professionals that used to serve previously in health stations, has decreased by about 50% as have the number of health stations. Most health assistants have undergone training and their posts upgraded to nurses. The pattern of change in health care facilities and number of human resources in the last five years is shown in Table 1.

Table 1. Pattern of development in health facilities and human resources in service during 2002-2006 (Ministry of Health of Ethiopia 2005/2006).

| Indicators | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|
| **Number of health facility** | | | | | |
| Hospital | 115 | 119 | 126 | 131 | 138 |
| Health centre | 412 | 451 | 519 | 600 | 635 |
| Health station | 2 452 | 2 396 | 1 797 | 1 662 | 1 206 |
| Private clinic for profit | 1 235 | 1 229 | 1 299 | 1 578 | 1 784 |
| Non-profit private clinic | 434 | 383 | 359 | 379 | 480 |
| Health posts | 1 311 | 1 432 | 2 899 | 4 211 | 5 955 |
| Pharmacy + drug shop | 620 | 601 | 650 | 657 | 722 |
| | | | | | |
| **Human health-resource in service** | | | | | |
| Physician | 1 888 | 2 032 | 1 996 | 2 453 | 2 115 |
| Health officer | 484 | 631 | 683 | 776 | 715 |
| Nurse | 12 838 | 14 160 | 15 544 | 18 809 | 17 845 |
| Health assistant | 8 149 | 6 856 | 6 628 | 6 363 | 4 800 |
| Paramedical staff | 3 824 | 4 641 | 5 215 | 6 259 | 5 431 |
| Health extension worker (HEW) | | | | 2 737 | 8 901 |

In spite of the above positive changes, the healthcare system in the country is still poorly developed. Public health care is accessible to 77% while the proportion of fully immunized children is 50% (Ministry of Health of Ethiopia 2005/2006). There is a heavy burden of disease with a growing prevalence of potentially preventable communicable diseases. Sadly, however, several of the top ten causes of morbidity at clinical settings can be either prevented or arrested early with adequate timely intervention (Table 2).

**Table 2.** Top ten causes of outpatient morbidity in Ethiopia during 2005/2006 (Ministry of Health of Ethiopia 2005/2006).

| Rank | Diagnosis | % |
|------|-----------|---|
| 1 | All types of malaria | 17.8 |
| 2 | Acute upper respiratory infections | 7.4 |
| 3 | Helminthiasis | 5.7 |
| 4 | Gastritis and duodenitis | 4.0 |
| 5 | Bronchopneumonia | 3.5 |
| 6 | Infections of skin and subcutaneous tissues | 3.3 |
| 7 | All other diseases of genitor-urinary tract | 3.2 |
| 8 | Primary atypical other and unspecified pneumonia | 2.5 |
| 9 | Amoebiasis | 2.4 |
| 10 | All other infections and parasitic diseases | 2.2 |
| | Total of top 10 outpatient diagnoses | 52 |
| | All other outpatient diagnoses | 48 |
| | Total outpatient diagnoses | 100 |

## 2.3 Some social factors and their roles in influencing children's wellbeing in Ethiopia

### 2.3.1 Civil strife and children in Ethiopia

Ethiopia has been in an unstable state particularly for the past 40 years due to civil war and its consequences. Although not properly studied in Ethiopia, it is not difficult to appreciate the impact of such adversities on children. During war, children suffer from the horrors of visual and auditory inputs on top of the direct suffering from physical injuries. During wars, children see frightening images and language about death of enemies and images of dead or mutilated bodies, hate/vengeance-filled family discussions and many similar incidents. The witnessing of brutalities, the sufferings from direct injuries, and war-associated traumas like prolonged lack of food and drink, lack of sleep, and the agonies of the feeling that one would die, and of difficult trudging along unfriendly terrain while fleeing violence are all associated with trauma in children. Such experiences lead to various forms of psychological distress (Miller and Rode 2003). The psychological complication of war on children was discussed in detail by Barenbaum et al. (Barenbaum et al. 2004). A study done in South Africa (Peltzer 1999) had also shown that children, exposed directly or indirectly to killings, serious accidents, and other violent crimes and life threatening situations were more at risk for Post Traumatic Stress Disorder (PTSD). In addition to the loss of significant attachment figures, the wars had made lots of children orphans with hundreds of thousands having been forced to lead vagrant lives. The war-drained economy meant scarcity of nutrition, education, and medical care. Farming, Ethiopia's biggest source of revenue, had been highly hampered during the civil war because the farmers were engaged in the mutual destruction. Studies in the 1990s have shown that farm

production in Ethiopia decreased by more than 50% from what it was in early 1960s. As a result of this, the youth in the country during the past four decades have been suffering from severe malnutrition (Yohannes 1999). It is known that these experiences in the growing child can lead to behavioural and mental difficulties (Richman 1993). Worsening the already compromised state of children due to traditional discriminations and economic limitations, war causes further deprivation of the possibilities for children of the right to intellectual, spiritual, and moral development, rights stipulated under the 1989 United Nations Convention on the rights of the child (Berman 2001). Consequently, there is disruption of the optimal social and emotional development of children affected by war (Joshi and O'Donnell 2003). It is, therefore, easy to deduce that the children in Ethiopia have been undergoing a protracted period of risks for emotional and behavioural disorders.

### 2.3.2 Famine and children in Ethiopia

Although famine had been occurring in Ethiopia on and off for many years, recently the frequency and the extent had been growing. Since the 1970s, some areas of the country have had severe draught followed by famine every few years. The outcomes of these were death and displacement, with children being the main victims (Lindtjorn 1990, Salama et al. 2001).

### 2.3.3 AIDS and children in Ethiopia

Ethiopia is one of the countries hit hard by different infectious illnesses including HIV. The latest official release puts the prevalence of HIV at 1.5% (Ministry of Health of Ethiopia 2005/2006). Parent's who have acquired AIDS fail to raise their children appropriately due to their debilitation. In addition, such parents are unable to work as much as when they were free of AIDS, resulting in decreasing or loss of earnings. This means that subsistence of family members is jeopardized. As is usual in such circumstances, children suffer the most. Hundreds of thousands of children have become orphans in Ethiopia due to loss of parents to AIDS (Bedri et al. 1995). Many of these children are driven to prostitution, vagrancy, or child labour. The lucky few end up in orphanages. All of these conditions are known to predispose children to different types of behavioural or mental problems. Psychological distress was found to be high among orphans who lost their parents to AIDS in Uganda (Atwine et al. 2005). In this randomized study among a rural country using Beck Youth Inventories of Emotional and Social Impairment (BYI), it was found that the orphans had greater risk for psychiatric disorders of anxiety and depression than non-orphans. Another matched controlled study in Tanzania (Makame et al. 2002) also showed that such orphans had markedly elevated internalizing disorders compared with non-orphans. This study also found that AIDS orphans were less likely than non-orphans to attend schools.

The mental distress is worse in children who are HIV-positive. In addition to having higher rates of axis 1 problems, the majority of children with HIV

suffer from greater physical pain, a condition that causes deterioration in their quality of life, adding to their mental suffering (Brown et al. 2000).

### 2.3.4 Education and children in Ethiopia

According to the Ethiopian Demographic and Health Survey System (DHSS 2005), the rate of primary enrolment in Ethiopia is only 42%. This is an improvement compared to the primary enrolment rate in 2000. Among those children who go to school, about 50% withdraw before reaching 5th grade and 65% drop out of school before reaching 9th grade (The World Bank 2005). Many of these school dropouts lose the opportunity of bettering their own fate through education. Many end up as street children. The alternatives for the girls are getting work as bar ladies or as house maids. All these situations are filled with distressing circumstances of maltreatment and abuse, known factors that increase mental disorders.

### 2.3.5 Unfavourable perinatal life

The predicament of children in poor Ethiopia starts before they are born. Most pregnancies do not have antenatal follow up. Moreover, less than 1/5th of deliveries are assisted by trained personnel (Central Statistical Agency [Ethiopia] and ORC Macro USA 2006). Only 50% of babies complete their immunization schedules (Ministry of Health of Ethiopia 2005/2006). The impacts of these unfavourable circumstances could include the high neonatal and infant mortality rates in the country. It is not difficult to presume that many children who survive such adversities may be living with various mental and physical complications.

### 2.3.6 The high rates of child mortality

A considerable proportion of newborn babies in Ethiopia are underweight. Moreover, stunting, underweight, or wasting is a feature of more than two thirds of the children. According to the national demographic and health survey in 2000, 97/1000 infants (10%) died before their first birthday. The under-five mortality was 166/1000 live births (17%). On the other hand, the figures in the 2000 demographic and health survey show that there was a decline in these rates over the previous 15 years. A similar survey done in 2005 showed further decline in these rates. According to this latest survey, infant mortality was 77/1000 live births (8%) and under-five mortality dropped to 123/1000 live births (12%) (Central Statistical Agency [Ethiopia] and ORC Macro USA 2006). Encouraging as the improvements are, the current figures are higher than global rates, even higher than child mortality rates in other African countries.

It is known that the causes of these higher mortality rates are malnutrition, lower respiratory infections, and diarrhoeal diseases. Although these problems are potentially preventable, they are the commonest morbidities among

Ethiopian children. Having survived these conditions, millions of Ethiopian children have lived through hard stress during a time in their development when they neither could understand nor could they do anything about their problems themselves. Such illnesses can result in behavioural and mental disorders.

### 2.3.7 Negative societal notions about children and rearing practices

Traditionally, children in Ethiopian societies are denied the care they require for optimal psychosocial development. Although all parents love their child, prevailing erroneous notions prevent adults from providing their young charges with care and respect. One of these wrong traditional notions is that children have no feelings. Because of this notion, parents exchange violent or obscene verbal or physical transactions in front of small kids. When parents want to persuade children to do or not to do something, they often threaten the child with corporal punishment or with horrifying events. Sometimes parents even tell children they will be given to hyenas or a wizard if they do not behave. The terrified submission of children in such situations is taken as a useful controlling mechanism by many parents. The popular belief is that children forget whatever bad experience they go through and that such experiences will not have any bearing on them later on.

The other erroneous traditional notion is that children should not be addressed with the same respect as adults. As a result, the child is told to keep quite when with adults. A child is reproached or shouted at or shooed away if he or she dares to ask question or makes a comment during adult discussions. The reason for this practice is that children will be spoiled if adults show them respect and give them opportunity to freely express their minds.

Verbal harassment and corporal punishment are believed to be good ways of shaping children in traditional Ethiopian societies. Parents and teachers often hit children with wooden or rubber sticks as punishment. Children receive corporal punishment not necessarily for making mistakes or for misbehaving but as a necessary reminder that they have to be disciplined. Many parents believe that children have to taste pain from time to time to develop discipline. I have vivid memories of a friend during my childhood whose father kept a stick made from a dried bull's penis for disciplining the children and the family's donkeys. The father used to beat the male children once every few weeks even when the children never misbehaved. Just like my old neighbour, many parents beat their children from time to time thinking that would do the child some good.

Another unhelpful traditional belief is that making friends with or playing with children is not right. Friendliness with a child is said to be harmful to the adult. An example of the expression of such beliefs is the colloquial Amharic sayings "ከልጅ አትጫወት ይወጋሃል በእንጨት [ke lij atichawet yiwegahal be inchet]" or "ከልጅ አትጫወት ምሳህን ይበላብሃል [ke lij atichawet misahin yibelabihal]". The respective literal translations of these sayings, which have the same message,

are "Do not play with a child lest the child will prick you with a stick" and "don't play with a child lest the kid will eat your lunch".

When it comes to sharing resources, children are allocated the least and the worst in the traditional rural society, which constitutes 85% of the population. Of the available food, the best food always goes to the adult and children get whatever is left.

Parents try their best to protect children from evil eyes more than extremes of the elements. This is because of the popular traditional concept that children do not feel changes in the weather, hence the traditional saying "the child and the face do not feel the cold".

In addition to condoning punishment, the tradition also uses threats as a means of making children submit to adult commands. Parents often threaten children with having their ear cut off, throwing the child in a field, giving the child to some cannibal wizard, a snake, or an imaginary frightening being, threatening with having the child bitten by a rat, a dog, or a cat, etc. Sometimes mothers threaten the stubborn child with abandoning him alone in the house. All these practices are done with the good intentions of making the child disciplined or obedient or quiet. Unfortunately, the society lacks awareness that such practices can lead to adverse effects like psychological distress and possibly more serious mental problem in the growing child.

### 2.3.8 Child labour in Ethiopia

One of the things that the majority of parents in Ethiopia claim as a blessing is the gift of children who can take over the burden of work from the parent. As early as two years old, children are given the duties of watching over their younger siblings. They are also expected to keep guard on washed clothes or grain left to dry under the sun. Around age four or five years, children are expected to herd domestic animals or to fetch water from the nearby river or spring. School age children are expected to help on the farm, to carry loads to and from the market or to carry grain to and from the mill. Up to the present, many rural parents don't send their children to school on time for the purpose of using their labour.

## 2.4 Why focus on children's mental health?

In Ethiopia, children are 50% of the total population. Because of this, they are burdened with many responsibilities usually performed by adults. In addition to the prevailing poverty that prevents parents from giving optimal care to their offspring, the huge gap in the knowledge and attitude of adults regarding children's mental and physical status and care can also contribute, directly or indirectly, to mental distress in the children. As mentioned above, some traditional notions and practices forgo the duty of promoting the child's emotional as well as physical wellbeing. Early emotional and physical insults impair optimal cognitive and emotional development in the growing child

(Andrés et al. 1999). The impact of these untoward traditional circumstances is likely to enhance the risk of mental and behavioural disorders in children (Grizenko and Pauliuk 1994, Last et al. 1996). Given these circumstances and the other adverse experiences of children in this country, I presume that the prevalence of mental disorders may not be less in the disadvantaged Ethiopian children than indicate in the literature. If after replications of similar or other studies, findings of smaller rates in Ethiopian settings turn out to persist as true population parameters, that would be of paramount interest to the whole world since every one would benefit from the information regarding the protective factors in adverse socioeconomic circumstances. Until doubts are cleared, the best approach will have to be, in my opinion, to hold on to the first presumption. Therefore, in order to promote mental health in Ethiopia, emphasis needs to be given to the mental and behavioural wellbeing of growing children. Unfortunately, no service exists in the country that attends to the emotional and other mental problems of children. The likely reason for this lack is the poor public awareness about the extent of mental and behaviour disorders of the youth, and the lack of awareness, particularly in policy makers, of the impact of disabling child mental disorders on the national economy and social harmony.

## 2.5 The general health care system in Ethiopia

The current National Health policy follows the fundamental principle that health constitutes physical, mental and social well-being for the enjoyment of life and for optimal productivity (Myers and Winters 2002; Central Statistical Agency [Ethiopia]; ORC Macro USA 2006). The government has formulated a special sectoral programme to translate the principle into action. The programme, called the Health Sector Development Programme (Ministry of Health of Ethiopia 2005), involves a 20-year strategy through successive 5-year implementation programmes. This programme aims at equitable access to health care, development of preventive health services, capacity building within the health care system and promotion of intersectoral activities through participation of the private sector and non-governmental bodies.

Since 2005, the HSDP is in its third phase (HSDPIII). The main areas of focus for the HSDPIII are associated to poverty-related health issues such as communicable diseases, malaria, and health problems that affect mothers and children. The Ministry of Health plans to achieve universal coverage of primary health care by the end of the HSDPIII. One of the innovative implementations of the third five-year programme has been the institution of the Health Extension Programme (HEP). In this segment of the HSDPIII, two female health extension workers (HEWs) per every 5000 residents are placed among the population. The main duty of the HEWs is to deliver 16 health care/health education packages, on outreach basis, in the areas of hygiene and environmental protection, disease prevention and control, family health services, and health education and communication. It is anticipated that

through the HEWs participatory preventive interventions will eventually bring about significant health improvement in the nation.

## 2.6 The evolution of mental health services in Ethiopia

### 2.6.1 Traditional notions and practices related to mental health and illness

#### 2.6.1.1 Traditional notions about the mind

From my personal observation, the majority of indigenous cultural notions reckon that themind is considered separate from the body. Feelings, perceptions, and thoughts are not understood as functions of the body but rather functions of the 'mind' determined by the interactions between the individual and the environment. These interactions are believed to be subject to manipulations by preternatural forces because of various factors. Under normal variations, a person's behaviour is a natural gift from a creator. Each person is given a set of predetermined behaviours. There are natural, predetermined varieties of behaviour. If some one is a bully that transgresses on others' rights, people are advised just to bear with him or to avoid/submit to him since the individual cannot do anything to change his natural behaviour.

#### 2.6.1.2 Traditional notions about mental illness

In spite of certain differences based on the explanatory model endorsed by the different belief systems, one of the most common traditional attributions is that mental illness is caused by the person falling in disfavour with any of the forces capable of altering the mind. The major forces that are believed locally to have this capacity are the good and the evil supernatural forces, or God and Satan, with their respective troops. In Ethiopia falling, out of favour with the good supernatural forces is the result of a transgression by the person or his family. One can also develop mental problems by being cross with a person closely allied with the good or bad supernatural forces (Alem et al. 1995). The evil supernatural forces can also cause mental problems when someone upsets such a force. It is said that these forces are given the authority to posses a man during certain wrongdoings. The commonest of such wrong doings are related with socially unacceptable sexual behaviour like having sex in the bush or having sex during the day. Evil forces also possess one when walking near the river when the sun is at its zenith or when youngsters walk in the dark or in the forest. In addition to wrongdoings, conspiring between evil superpowers and enemies of a person can also cause that person mental illness. This is brought to effect through the mediation of some gifted individuals who have special powers to cast spells by directly summoning the devil or by various other means.

Apart from such involvement of supernatural powers, it is traditionally believed that a person can also develop mental illness by the ingestion of the

leaves, fruits, roots, or seeds of certain plants. The evil eye is also another commonly accepted cause of mental illness. Some believe there are certain people who have the power to make a person possessed and mentally ill just by looking at their victim. The evil eyes attack mostly if and when they see a person while that person is engaged in eating meals or if and when they see beautiful and well-fed children. Because of this notion, most traditional people are uncomfortable having their meals while being watched by strangers. Most mothers would do their best to prevent strangers and suspected evil-eyed persons, locally called 'buda', to have contact with their children. If a suspected buda is caught watching a child, the child is asked to spit on the spot. The spitting action is believed to dispel any possession that might have occurred from the evil eye.

### 2.6.1.3 Traditional treatments for mental illness

For most families, help is sought first from traditional healers. Of these traditional interventions, the religious methods are used most. Even though people first approach the services provided by their own religion, many people also use services given by religious healers from religions other than their own.

The religious healings depend on the particular religion's explanatory model and on the locality (Alem et al. 1995). One common feature of the religious healings is that each religious system uses its few approved treatment methods for all sorts of mental problems and for all people seeking help. Praying and entrancing are common to almost all religious systems. Holy water treatment is a major mode of treatment by the orthodox Christian churches. Entrancing is practiced moreby the Protestant churches and the traditional healers called 'qallichas'.

The non-religious methods are provided by individuals who are said to have inherited some healing powers from their parent or individuals with special natural gifts, individuals trained in healing skills or making special concoctions of herbs, or individuals trained to be magicians. Often the non-religious healers give their practice some religious dressing in order to get recognition by the devout believers. Their methods vary from casting spells to the use of roots and leaves of certain herbs and the use of entrancing.

There has not been any study done to test the effectiveness of these healers. In many cases, it is difficult to differentiate among the quakers and the innocent healers that follow an established traditional or religious method. This has become more so in the present times when the escalating population size, unemployment, and diminishing resources are forcing some crafty individuals to use quackery as a means of survival. Whatever the outcome of their treatments, the traditional healers are the first to be contacted by most families who opt for help for their mentally ill family member.

### 2.6.2 Modern mental health services

Although modern medicine was introduced to Ethiopia during the early nineteenth century, mental health service came into the nation's health care system only since the 1940s. Until the late 1980s, psychiatric treatment was provided only at the capital city, Addis Ababa. The service was given at the country's only mental hospital in the capital city, which has been serving as the only psychiatric institute in the country. Medical management then was provided by a couple of psychiatrists from communist Europe who could speak very little English and none of the local languages. These professionals talked to patients through translators. The translators were non-mental health local staff that also spoke very little English.

Ethiopian psychiatrists started working in the psychiatric centre in the 1980s. Mental health services were not getting the necessary attention until several years ago. This is probably because the decision makers were less concerned for the mental problems of citizens as they were for the other infectious conditions which resulted in a more dramatic outcome in shorter time than focusing on mental illnesses. It is also possible that decision makers had shared the notion that mental illnesses are outside the scope of medicine. As a result, the psychiatric centre used to be a dumping place for health workers who fell in disfavour with the authorities in the Ministry of Health. Up to about 10 years ago, centre was not properly funded. There were times when staff working at the centre had to pay for patients' medical expenses.

With such negative attitude prevailing, the development of mental health awareness and services in Ethiopia (even to where it is at present) would have been impossible had it not been for the consistent efforts of a few professionals and stakeholders. Continuous education and close working relationships with the responsible authorities gradually paid off. A turning point in the development of mental health service in Ethiopia was the start of a WHO-sponsored training project for psychiatric nurses. Practicing registered nurses were recruited and trained for one year in psychiatric diagnosis and treatment of common mental disorders. Upon completing their training, the psychiatric nurses were assigned in regional hospitals. Thus the decentralization of psychiatric service started in the country by the end of the 1980s. Another turning point in the development of mental health services in the country was the recent approval of the Ministry of Health to produce a national mental health policy separate from the national health policy. The draft of the policy is now in its final stage. A government endorsement is expected in 2008.

Mental health is now among the issues addressed in the national health policy. Mental health interventions are among the activities of the third five-year National Health Sector Development program (HSDPIII) that started in 2005 (Ministry of Health of Ethiopia 2005). In this plan, the Ministry of Health has set a schedule to mainstream mental health in 80% of the public healthcare

institutions. Training of frontline health workers has also been scheduled in this programme.

### 2.6.2.1 Mental health facilities in Ethiopia

Mental health service is provided in the country by four types of facilities: outpatient facilities, inpatient facilities, the mental hospital, and residential facilities (World Health Organization and Ministry of Health of Ethiopia 2006).

a) **The outpatient clinics** are now the front line contact points for most patients. These clinics, run by psychiatric nurses, were started in 1986 and their number has been growing albeit irregularly. There are now about 54 institutions throughout the country providing outpatient treatment. Over 50% of psychiatric visits in the country are at these centres.

b) There are six **inpatient facilities** in four of the nine federal regions. These facilities are within general hospitals including the armed forces and the police hospitals. Their combined bed capacity is about 100 beds. Psychiatric nurses and non-psychiatric doctors give services.

c) There is only one **mental hospital** in the country. It is located in Addis Ababa but serves the whole nation as the highest referral and training centre in mental health. It has 360 beds. This institution is now officially designated as the country's central referral, mental health training, and research centre. The hospital is also given the responsibility of planning and monitoring the country's mental health services. In other words, the hospital, apart from providing services to clients, acts as the mental health department of the Ministry of Health. In addition, the hospital is the centre for the training of medical and nursing students. Most of the post-graduate training for psychiatric residents and the training of psychiatric nurses also take place in the hospital. However, its infrastructure is very poor both in quantity and quality of buildings and equipment. Because there is a shortage of rooms, there are no separate specialty services. Children and adults stay in the same wards with occasional tragic incidents such as physical and even sexual abuse. Dangerous cases referred from prisons by court orders, patients who should be in separate forensic units, are kept with other patients for lack of separate units. Armed soldiers who are assigned by the Prison Police also stay in the same ward with these patients. This phenomenon has been observed to lead to the aggravation of symptoms of paranoia in some of our regular inpatients, especially children. There are no specialized services for children and adolescents. One of the plans in the HSDPIII has been to renovate and expand the mental hospital. When the renovation is complete, it is hoped that the hospital will have less adult beds but will have amenities for children, the elderly, for forensic cases, and for therapeutic services.

d) There are two types of **residential facilities** for severely mentally ill people in Ethiopia. The government runs the two public residential

facilities. They are found in the outskirt of the capital city and have a combined capacity of 180 beds. One of these caters to people with chronic mental disability and the other one is for the homeless elderly. Many homeless elderly have senility and mood problems. Social workers and other administrative workers staff these units. The mental hospital contributes to the facility for the chronically mentally ill by providing regular visits from psychiatrists and by providing psychotropic drug supplies. This facility is also lately getting considerable support by two community-based organizations involved in mental health rehabilitation work.

The other form of residential facility is run by non-governmental humanitarian organizations, notably the Catholic missionaries. There are several such facilities throughout the country, that shelter the destitute from the streets. Although their clients include many mentally ill persons who used to lead vagrant lives, they don't have any service for children.

### 2.6.2.2 Mental health workers

Before 1987, there were only two endogenous psychiatrists in Ethiopia. By 1993, the number of Ethiopian psychiatrist had grown to 10. In 2007, there were 22 psychiatrists in the country. Three of these psychiatrists started working in regional capitals since the later half of 2007. This phenomenon is a major transformation in the mental service coverage of the country. Up to 2007, all psychiatrists were stationed in the capital city where four referral and teaching hospitals in three of the most populous regions outside Addis Ababa have their psychiatric departments led by a psychiatrist.

There are 10 general practitioner posts at Amanuel hospital. These general practitioners are trained for few months and through continuous medical education in the hospital. Their duties involve treating clients with medical as well as psychiatric problems. They see most of the new and follow-up cases in the outpatient department. They are supported and supervised by the psychiatrists.

Amanuel hospital also irregularly trains general practitioners in mental health management for six months. These trained practitioners return to their institution where they are expected to give psychiatric service in addition to their other duties. Because there had not been any career development in the field, many such trained practitioners have now joined other disciplines.

Since 1987, 300 psychiatric nurses have been trained. Presently, service is being provided at 54 sites throughout the country. Psychiatric nurses work in pairs. However, despite the continuous training and assignment of psychiatric nurses, the attrition rate continues to be high. Over half have left the public sector because of low incentives and frustrating working conditions. Some even have abandoned psychiatric nursing.

Until 2007, there was only one social worker and two psychologists working in the Amanuel mental hospital. These and the two psychologists and one additional social worker that started work in the latter half of 2007 have no formal clinical training and their work depends on experience they gained while working in the hospital. There are about 300 psychologists and an equal number of social workers working as counselors in high schools and other governmental and non-governmental organizations. Most of these counselors also have had no special training other than their basic educational psychology courses. The ratio of mental health workers population ratio in Ethiopia is listed below (World Health Organization and Ministry of Health of Ethiopia 2006).

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Psychiatrist = 1:33 000 000

Psychiatric Nurse = 1:257 000

Psychologist (in schools, humanitarian organizations) = 1:257 000

Social worker (humanitarian organizations) = 1:257 000

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None of these professionals have any training in child-oriented therapeutic or rehabilitative skills. There are no child psychiatrists. There are no specialized therapists trained in occupational, play therapy, or other skills to address the needs of mentally or behaviourally disturbed children.

## 2.7 Epidemiology of child psychiatric disorders

Epidemiology is the study of patterns of the distribution of diseases. As such, the main purposes for epidemiology are describing the pattern of distribution in the population after counting cases and determining patterns of distribution and trends, explaining the causal relationships, determining risk factors, and suggesting preventive and curative interventions (Costello et al. 1993).

### 2.7.1 Epidemiology of child psychiatric disorders in the developed world

With the above context, child psychiatric epidemiology started in the west in the mid 1960s but with only few investigations of rates of psychopathology in general population samples (Fombonne 2002). It appears that the progress of child psychiatric epidemiology was slow in the first couple of decades since the 1960s. In 1989, experts wondered whether the benefits gained from epidemiological progress in the field of infectious diseases could be repeated in psychiatric disorders in adults and children (Costello 1989). The absence of agreement on case definition, diagnostic criteria, and classification data, the lack of standardized assessment tools, and the lack of common analytic techniques were seen as the reasons for the lag in the progress of psychiatric epidemiology (Costello 1989). The development in child psychiatric epidemiology did progress remarkably since the late 1970s. Developments in deficient areas that were identified by Costello expedited the pace of progress in child psychiatric epidemiology. Among these developments were creation of

classification systems with diagnostic criteria for specific conditions, the development of standardized classification systems, the inclusion of impairment in the criteria for case determination, and the development of multitudes of standardized assessment tools. In 1998, Roberts and Attkisson noted that the number of studies performed since 1980 through the end of the 1990s was equal to the number of studies done before that period. By the late 1990s, epidemiological studies had become the basis for public health policy in the provision of child mental health services (Roberts and Attkisson 1998). It was stated in 2005 (Costello et al. 2005) that the progress in child and adolescent psychiatry in the previous decade had become so outstanding that the field caught up with other branches of medicine and psychology and that it even exceeded others when it came to longitudinal epidemiological sample studies. The types of behavioural and mental disorders, the prevalence of such disorders in the community, the pattern of distribution, the risk factors associated with the specific conditions, the pattern of change in the occurrence of disorders along the life span of children, the severity of disorders as determined by the level of disability and impairment caused on the individual child's functioning in various aspects, and the burden of disorders on the national economy have been studied in Europe and the US. The outcome from such studies has been used to guide health policy in the developed world (Roberts and Attkisson 1998).

*Classification of child psychiatric disorders*

With regard to classification, the two widely used classifications are the Diagnostic Statistical Manual of mental disorders of the American Psychiatric Association (DSM), which is now in its fourth version (American Psychiatric Association 1994) and the International Classification of Diseases (ICD) of the World Health Organization, which is now in its tenth version (World Health Organization 1993).

*2.7.2 Epidemiology of child psychiatric disorders in developing countries*

It has been only a couple of decades since significant work started in the developing world regarding the epidemiology of child psychiatric conditions. Even then, in comparison to the economically advanced nations, very little work has been performed in the developing world on the epidemiological study of psychiatric disorders in general and child psychiatric disorders in particular (World Health Organization and Global Forum for Health Research 2007). Work on mental health research from countries other than the US, western Europe, and Australia/New Zealand contributed only 6% to the scientific literature in the high impact psychiatric journals (Maj 2005).

Like all other scientific works, child psychiatric services were also introduced into the developing world by the former colonial powers. Few endogenous professionals attempted to report on clinical samples but the majority of reports before 1980 were lacking in epidemiologic information; some of these

studies did not even cite important parameters such as age, sex, and diagnosis (Minde 1976). In 1981, a two-stage multicenter study involving developing countries across three continents (Asia, Africa, and South America) found prevalence rates of 'psychiatric disorder', 'emotional disorders', and/or 'mental retardation' to be 12% in the Sudan, 15% in the Phillipines, 22% in India, and 29% in Columbia (Giel et al. 1981).

Recent reports in Asia have shown that child psychopathology is common. In India, researchers recently found that 12% of 4-16 year-old children had psychiatric morbidity. When impairment was included in the criteria for diagnosis, the same study in India found the prevalence to be 5.3% (Srinath et al. 2005). A two stage study on children in Bangladesh revealed that the prevalence of any ICD-10 diagnosis was 15% (Mullick and Goodman 2005).

In Africa, it has been nearly four decades since the first community study on children was reported from Sudan (Cederblad 1968). This 1968 report of Cederblad is said to be the first among all investigations of child psychiatric disorders in a specific community in any Third World population (Minde and Nikapota 1993). In this pioneering work, Cederblad studied 1716 3-15 year-old children in villages around Khartoum, the Capital city of Sudan, and found that 8% of the children had psychiatric morbidity. Although insignificant in number when compared to the developed world, studies have been done on children in different parts of Africa since Cederblad's report. As part of a World Health Organization supported study conducted in three continents to develop an instrument for identifying mental health in children at the primary care level, Giel, et al. conducted a two-stage screening using the Reporting Questionnaire for Children as a first screening and a follow-up psychiatric interview as a second screening. This survey showed that 26 out of 250 children attending general outpatient clinic in the Sudan had clinical psychiatric syndromes (Giel et al. 1981). A study done in a small rural community in Nigeria used Rutter's 'Teacher's Scale' in addition to applying the same method as Giel et al. to assess the prevalence of mental disorders in a community sample of 500 randomly selected 5 to 15 year-old children. The findings showed a 15% overall prevalence of psychiatric morbidity among the study children (Abiodun 1993). Another study in Nigeria (performed on primary school children) interviewed parents using the Rutter scale A2. The results of this study revealed 18.6% of the children qualified as cases (Adelekan et al. 1999). In a cross-sectional study involving a community sample of five hundred 6 to 16 year-old African children in south Africa, psychiatric disorder with impairment was found in 15.2% using the Diagnostic Interview for Children (DISC) (Robertson et al. 1999). In a comparative study of parent reported behavioural and emotional disorders in the US, Thailand, and Kenya, it was found that Kenyan children had similar relatively high total problem score on the Child Behaviour Checklist. In that study, the Kenyan children manifested more with internalizing symptoms than the US counterparts (Weisz et al. 1993).

### 2.7.3 Epidemiology of child psychiatric disorders in Ethiopia

The notion about mental abnormality has been known in Ethiopia for centuries. Mental problems have traditionally been classified based on the specific belief system in the various localities. The notion also extends to determining aetiological factors and cures and prognoses. Traditionally, it is believed by most people in Ethiopia that a child becomes behaviourally deviant out of badness or to gain attention. When the behaviour problem is taken as not deliberate, it is usually attributed to several causes. One attribution is that a child develops behavioural problems when the family is punished by supernatural forces for parental or ancestral sins. Many parents also believe that the development of unwanted behaviour in their child can be the work of evil super powers, of jealous neighbours or relatives, or enemies who conspired with different evil forces to bring peculiar behaviour to the offspring. In addition to this universal traditional notion regarding attribution, it is customary to ascribe behavioural changes like stubbornness and negativism in an adolescent to age-related transitional processes. When an adolescent develops behaviour problems of isolation, unusual quietness, or other features of serious depression or other major psychiatric disorders, it can be ascribed to the adolescent's falling in love with some one.

Few community based epidemiologic studies have focused primarily on children in Ethiopia since the 1960s. In 1969, Giel et al. reported the findings of their study in children from three locations. These locations were a roadside town in the southwest of the country, a rural community from the area surrounding that town, and the remand home for under-age offenders in the capital city, Addis Ababa. The prevalence of psychiatric illness in the remand home (n=50 boys) was 46%. Bedwetting was present in 8 of the 23 cases, co-morbid with other conditions. The other co-morbid conditions were emotional problems (6/23), mental deficiency (5/23), anti-social behaviour (3/23), petrol inhalation (4/23), anxiety (3/23), abnormal aggressiveness (4/23), and epilepsy (1/23). An interesting diagnosis from this report was "craving for dust" (1/23) (Giel et al. 1969). The "craving for dust" diagnosis was interesting because in Ethiopia dust is everywhere, including in remand homes. The prevalence rates of mental problems in the roadside town and the surrounding villages were reported after categorizing the children into two age groups. Psychiatric disorders were found in 4.2% of the roadside town and 3.1% village children aged 0-9 years. For children aged 10-19 years, the prevalence rates were 5.7% in the roadside town and 10% in the nearby villages. Bed wetting was the commonest disorder in the younger children, followed by epilepsy and mental retardation. Bedwetting was also the commonest finding among older children, followed by rebellious behaviour and psychosomatic illness, epilepsy, and mental retardation. Girls consisted 50% of the sample in the roadside and the village samples (Giel et al. 1969). The report from Giel et al.'s study didn't specify the method of screening for the town and surrounding villages but stated that "In both instances the

people in the sample were examined during home visits". The remand home sample was screened by interviewing the children.

Another community survey (Mulatu 1995) was carried out on a sample of 611 children between the ages of 6 and 11 years in Jimma, a provincial town in the western part of the country about 40 km from where Giel et al. did their study. The Jimma study was done by interviewing parents or caregivers using the Reporting Questionnaire for Children (RQC) along with a modified version of the Child Behaviour Checklist CBCL). Sampling was reported to be random. In that study, psychopathology was found in 23.2% of the sample. The third population-based study on children in Ethiopia was carried out on a randomly selected mixed urban and rural sample of 3000 children in a central region (Tadesse et al. 1999). The instrument used by Tadesse et al. was the RQC. The results of that study showed that 17.7% of the children were reported to have at least one item of the RQC. Rural and urban samples were not compared with regard to their various features including prevalence rates. Unlike the RQC study used by Mulatu et al.'s study didn't use a second screening to reach diagnosis. Later, however, a psychiatric interview was applied on a proportion of the study sample (1196/3000) to validate the RQC. The instrument was found to have high sensitivity and specificity compared to psychiatric interview. The fourth community-based study was also done on a large representative sample of 5 to 15 year-old children (n=1477) in a predominantly rural population in a southern region of the country (Ashenafi et al. 2001). The instrument used in this study was the parent version the Diagnostic Interview for Children and Adolescents, revised (DICA-R). Trained high school graduates interviewed parents or care takers using the DICA-R that had already been translated into the local working language and validated (Kebede et al. 2000). Ashenafi et al. found an overall prevalence rate of 3.5% for conditions of the Diagnostic and Statistical Manual for Mental disorders (DSM-III-R) (American Psychiatric Association 1987). Ashenafi et al. also reported for the first time in Ethiopia the prevalence rates of some specific DSM-III-R conditions in the children. Accordingly, the following conditions were found in the study subjects: anxiety disorders (1.6%), attention deficit hyperactivity disorder (1.5%), disruptive behaviour disorders (1.5%), mood disorders (1%), elimination disorders (0.85%), and substance use disorder (0.3%).

The overall prevalence rates of reported by Giel et al. in 1969 and Ashenafi et al. in 2001 are close to each other and lower when compared to Mulatu's finding, which is the highest prevalence rate of child psychopathology in the country so far. All of these studies had used random sampling. Apart from the location, the variation in data collection was the major difference among the four. Varying cultural notions and practices of the respective localities of the study areas are also among the differences. It has been reported that cultural variations in child rearing practices and other societal phenomena do influence psychopathology in children as well as in adults (Weisz et al. 1993).

In spite of the findings of community based studies, the national health report of the Ministry of Health indicates that mental problems in general and child mental problems in particular are insignificant (Ministry of Health of Ethiopia 2005/2006). The contradiction between the yield from the field and the report from the health care system is most likely a result of low awareness about child mental health problems in the health care workers. Such discrepancy could have possibly been influenced by the fact that families do not take mentally ill children to health care workers. Even if health workers could identify cases of mental disorders, the recording system in Ethiopia is a hindrance for appropriate recording and reporting. The Ministry of Health of Ethiopia collects reports regarding daily clinical encounters by using the defunct ICD-6 nomenclature, which has very few categories for adult as well as paediatric mental problems. This reporting system still persists while the rest of the world is preparing to welcome ICD-11.

There is fairly better information in Ethiopia about the extent of adult mental health problems in the country. Such understanding was a result of properly planned prevalence studies in urban (Kebede et al. 1999) as well as in rural (Alem et al. 1999) populations. The information on the situation of child mental health problems in the country is not yet clear. The few studies done so far on children in Ethiopia have found the prevalence of child psychiatric morbidity in the range of 3.5% (Ashenafi et al. 2001) to 25.2% (Mulatu 1995). Most of these studies were done on clinical samples and did not use criteria that follow the accepted international nomenclature in childhood mental disorders. To contribute to this knowledge, we planned to carry out this study in the urban population as a follow-up to the one done a few years previously in a predominantly rural population (Ashenafi et al. 2001).

# 3 OBJECTIVES OF THE STUDY

## 3.1 Overall objective

The status of child mental health problems in Ethiopia is unknown. Although few community studies in Ethiopia have lokked at child mental problems, most involved checklists for assigning a diagnosis, making it difficult to tell whether the severity of the identified symptoms would have qualified for the alleged diagnoses. This study examines the development of a screening technique in the health care system by using translated versions of valid tools to determine the types and extent of mental and behavioural disorders of the country's children in order to provide reliable information for policy formation and health care planning.

## 3.2 Specific aims of the study

1. To determine the prevalence of specific child behavioural and mental disorders.

2. To see if there were any associations between socio-demographic conditions and the occurrence of specific child and adolescent mental and behavioural disorders.

3. To determine whether a simple screening checklist can be used at the primary health care level to identify children at high risk for mental disorders.

*Aims of the individual papers:*

Paper I evaluates the agreement between the screening checklist and the semi-structured interview. Paper II discusses the findings of prevalence rates of DSM-III-R conditions and the correlates of general psychopathology in urban children. Paper III describes enuresis as the most common in the urban sample. Paper IV describes the socio-demographic correlates of disruptive behaviour disorders and anxiety disorders.

# 4 SUBJECTS AND METHODS

## 4.1 The setting

Addis Ababa, the capital city of Ethiopia was chosen for two reasons. Primarily, it was decided that the study should be done in an urban setting because a previous similar study, was carried out in a rural setting and it was presumed that the result from an urban setting would give information for a complete picture of the mental health status of Ethiopian children. Secondly, Addis Ababa was chosen because, by virtue of its central role as an economic and social service centre of the country, is inhabited by people from all areas and ethnic groups of the regions, making it the ideal place for getting a representative sample.

Addis Ababa is geographically located at the centre of the country and has an area of 250 square kilometres. The altitude of the city ranges between 2000 and 3000 meter above sea level. Generally, the climate is warm and the city has an average temperature of 16°C and annual rainfall of 1000 mm. The city possesses most of the nation's industries, as well as a large share of the country's health and social services. At the time of this study, the city was administratively divided into six zones that were divided into 28 districts (locally called weredas) and 306 sub-districts (locally known as kebeles). According to Ethiopia's second ever national census which was carried out in 1994 (Office of the population and housing census commission 1996), the population of the city was estimated at 2.2 million, with 43% of the population being less than 15 years of age. All of the country's ethnic groups are represented in Addis Ababa. The crude death rate was 7.5 per 1000, infant mortality was 75.4 per 1000 live births, and life expectancy at birth was 63.3 years. Over 87% of the population had attended school by 1994. Over 98% of the population got its water from pipes or protected wells and springs. About 30% of the population had neither a private nor a shared toilet facility; it was assumed these people used the streets and open fields for toilet. More than 96% of the houses in the city were single storied and 81.8% had walls made of wood splinters and mud. More than half of the city's houses had earth floors. Compared to other areas of the country, the capital city had greater health coverage. The city also fares better with regard to the health care indicators. Although the city of Addis Ababa constitutes 4% of Ethiopia's population, it has 20% of the country's hospitals, 11% of the country's health centres, and 47% of the nation's pharmacies. Moreover, the city enjoys a far better distribution of health professionals when compared to the national situation. The physician to population and the nurse to population ratio for the nation and for Addis Ababa are 1:35000 and 1:12000 respectively. The psychiatrist to population ratio for Addis Ababa is 1:167000 while the figure for the whole country is 1:3.3 million. Table 3 below shows the comparative differences in

the different demographic and health indicators between the city and the whole country.

**Table 3.** Differences between Addis Ababa (the urban study area) and the whole of Ethiopia regarding some health indicators (Ministry of Health of Ethiopia 2005/2006).

|  | Addis Ababa | Ethiopia |
|---|---|---|
| Population | 3 million | 75 million |
| Male to female ratio | 100.4 | 92.4 |
| Infant mortality rate | 45 | 77 |
| Under five mortality rate | 72 | 123 |
| Antenatal follow up | 58.8% | 50.4% |
| Proportion of attended deliveries | 28% | 15.1% |
| Male life expectancy | 60.3 | 53.4 |
| Female life expectancy | 64.1 | 55.4 |

## 4.2 Sampling

To calculate our sample size, we had assumed from existing local and international data that the prevalence of mental/behavioural disorders in children would be about 15%. According to the 1994 census, children between the ages of 6 and 15 years constituted 20% of the City's population. Given these, a sample size of 740 would have sufficed to estimate prevalence within 2% margin of error with a power of 90%. However, the lesson from previous experience in the rural population (Ashenafi et al. 2001) had indicated that the prevalence of specific psychiatric disorders could be too small for analysis. As the major objective of the study was to estimate prevalence of specific mental/behavioural disorders and to analyse the association among these disorders and socio-demographic factors, the fear was that the above sample size would lack adequate power to detect differences. Because of this and after considering available resources, it was decided to raise the sample size for the first screening to 5000 children.

During the first phase of the study, researchers visited parents several times if parents refused to participate or were not home during the visit to a household. When interviews failed for the second time, the interview of the next household was performed using +1/-1, +2/-2 method.

The second phase study involved all children who were reported to have one or more of the 10 RQC items. In addition, this phase included 2 RQC negative children as controls.

## 4.3 Instruments

### 4.3.1 The Reporting Questionnaire for Children (RQC)

For the first stage screening, we used the RQC. The RQC is a ten-item questionnaire designed to be simple, easy to understand and easy to answer. The instrument was developed by mental health experts following examination of the relevant literature and discussions concerning the relevance of the items. While selecting the ten items, the developers had given high emphasis on the need for the items to be asked and answered simply, clearly, and without ambiguity and to be seen as recognizable behaviour experiences of children (Giel et al. 1981). The ten RQC items are shown below.

**Table 4.** The ten RQC items developed by Giel et al. (Giel et al. 1981).

1. Is the child's speech abnormal in any way?
2. Does the child sleep badly?
3. Did the child ever have a fit or fall to the ground for no reason?
4. Does the child suffer from frequent headaches?
5. Does the child run away from home frequently?
6. Does the child steal things from home?
7. Does the child get scared or nervous for no real reason?
8. Does the child in any way appear backward or slow to learn as compared with other children about the same age?
9. Does the child nearly never play with other children?
10. Does the child wet or soil himself/herself?

Giel et al. tested their newly developed instrument in four developing countries. The questionnaire was intended to pick potential cases. In the test sites, parents accompanying children to selected health institution for any health problem were interviewed. The interviews were carried out by trained auxiliary nurses in Columbia, by a sociologist, a social worker and a psychologist in India, by medical students in the Sudan and by a research assistant of an unspecified profession in the Philippines. The children were then immediately taken to the health worker responsible for primary care for their labelling. The primary health care worker was asked to state whether the child had physical illness only, mental illness only, combined mental and physical or undetermined. Finally, experienced child psychiatrists assessed the children. The RQC administered by these lay interviewers had high sensitivity (89.7%-100%) compared to psychiatric assessment, whereas the primary care worker's diagnosis was of low sensitivity (10%-22%). The RQC can identify potential cases at a cut-off score of 1. The RQC also has an acceptable validity, as noted by other studies in African and Asian settings (Omigbodun et al. 1996, Ahmad et al. 2007).

### 4.3.2 The Diagnostic interview for Children and Adolescents (DICA-R)

The DICA-R questionnaire comes in three versions: one for parents, one for children who are 6-12 years and one for adolescents. It has 16 parts with a total of 421 question and many probes and explanations to enhance understanding between interviewer and interviewee. The first and second parts have 20 questions that are used to determine identification and demographics. Part 3 to 14 are about specific mental and behavioural syndromes and involve main questions from No. 21 to 405. These main questions are mostly accompanied by sub-questions, making the total number of questions 860. The sub-questions are specifiers that help to rule in or rule out a specific diagnosis according to the DSM-III-R nosology. For example, from the total of 103 questions regarding conduct disorder (CD), only 18 are main questions that enquire about a particular symptom of conduct disorder. The other 90 queries are repetitive specifiers asked after the main query about the major items regarding onset, frequency, latest episode, circumstances, impairments etc. If the main sign is not present, the skip rule allows the interviewer to pass the rest of the questions and mone to the next main question. The different DSM-III-R conditions included in the DICA-R and the total number of queries for each condition is shown in Table 6. The DICA-R was reported to have most of the merits required of instruments that can be used in the community to classify childhood disorders (Boyles et al. 1993). We decided to enquire about all main items and psychosocial stressors because, in Ethiopia, prevalence estimates of childhood psychiatric disorders using a valid instrument with an accepted nosology have not yet been reproduced to a satisfactory level.

**Table 5.** Specific DSM-III-R conditions included in DICA-R and the number of queries regarding each condition.

| Type of disorder | Number of queries | Type of disorder | Number of queries |
|---|---|---|---|
| **Chapter III\*:** Behaviour disorders | | **Chapter VII:** OCD | |
| ADHD | 27 | Obsessions | 17 |
| CD | 103 | Compulsions | 12 |
| ODD | 18 | | |
| Alcohol use and abuse | 77 | **Chapter VIII:** | |
| Cigarette smoking | 8 | PTSD | 27 |
| Glue sniffing | 8 | | |
| Marijuana use | 70 | **Chapter IX**: Eating disorders | |
| Street drugs | 66 | Anorexia nervosa and bulimia | 36 |
| | | | |
| **Chapter IV:** Mood disorders | | **Chapter X:** Elimination disorders | |
| Dysphoria | 14 | Enuresis and encopresis | 22 |
| Pervasive anhedonia | 6 | | |
| Irritability | 6 | **Chapter XI:** | |
| | | Menstruation | 12 |
| Other depressed symptoms | | | |
| 1. Appetite disturbance | 18 | **Chapter XII:** | |
| 2. Sleep disturbance | 8 | Gender identity (girls and boys) | 14 |
| 3. Psychomotor retardation and agitation | 8 | **Chapter XIII:** | |
| 4. Fatigue | 4 | Somatisation | 34 |
| 5. Worthlessness/excessive guilt | 9 | | |
| 6. Trouble concentrating or indecisiveness | 10 | **Chapter XIV:** | |
| | | Psychotic symptoms | 27 |
| 7. Suicidal ideation | 39 | | |
| | | **Chapter XV:** | |
| Manic episode | 21 | Psychosocial stressors | 23 |
| | | | |
| **Chapter V:** Dysthymic disorder | 18 | **Chapter XVI:** | |
| | | Interviewer's estimate of respondent's reliability | 6 |
| **Chapter VI:** Anxiety disorders | | | |
| Separation anxiety disorder | 17 | | |
| Avoidant disorder | 14 | | |
| Overanxious disorder | 17 | | |
| Phobias | 44 | | |

\* The DSM-III-R diagnoses start from chapter III. Chapter I of the DICA-R contains identification variables while chapter II is about demographic enquiries.

## 4.4 Training and selection of the interviewers

After sifting through the list of workers involved in recent data collection, and after consulting with researchers who had employed them, 35 high school graduates with experience in data collection were selected and trained in data collection. The interviewers, 20 of them females, were intensively trained until they demonstrated to a satisfactory level that they could administer the questions clearly and could also facilitate completeness of information from the respondent by using the necessary probes at the proper time. The training was given five and half days per week. My research assistand and I conducted the training. The research assistant was a physician who had done his masters in public health. He had a lot of experience with the DICA-R while he did his post graduate research on a rural sample of children (Ashenafi et al. 2001).

The training consisted of lectures on interviewing techniques and conducting DICA and RQC interviews. The exercises were first done by demonstration by the principal investigator; this was followed by mock interviews conducted by the trainees. Later, each trainee interviewed a volunteer parent invited from the city, while the rest observed. Immediately after each interview, the volunteer parents were asked about their feelings regarding the interview. This was followed by discussion and explanations about the interview. Finally, trainees were given written and practical examinations. After analysing the examination results, a few points were discussed regarding communication skills, particularly regarding culturally sensitive issues while talking to parents about their children's behaviour. It was necessary to ensure that all interviewers realized the importance of making it clear to parents that the different behaviour types they were about to be asked were present in many children all over the world, and that any information that they discussed during the interview would be kept confidential. Finally, based on the results of these examinations, six supervisors and 24 interviewers were selected to perform the data collection interviews.

## 4.5 The interviews

Preparation for the interview was made ahead of the interview date. The supervisors, interviewers and two people who were employed as leads from each kebele administration, visited selected households two or three days ahead of the interview date. During this early visit, the field workers showed the parents/caretakers letters of approval from the respective Zonal Health Bureau and the District administrative authorities and the letter written by the principal investigator explaining the purpose of the study. During these visits, it was also made clear to parents that the interview might take a couple of hours. Appointments were secured and agreement made with the parents that they would save the interview day only for that purpose.

For the first phase of the study, the interview started randomly from one of the selected houses in each kebele. Whether the respondent was literate or not,

the interviews were made in such a way that the interviewer read the RQC items to the respondent. The interviewers carried a later that contained introductory explanations about the research and relevant issues and consent statements. The explanations included statements describing the researchers' acknowledgment of the respondent's willingness to participate, the purpose of the interview, the universality of behaviour problems globally, the commitment on the part of the research team to protect confidentiality, and the national importance the respondent's contribution has for the understanding of children's behaviour problems and in guiding policies of service development in the country.

While data collectors interviewed parents/caretakers, supervisors hung around and were contacted by interviewers when the RQC status of assessed children was determined. The supervisors used that information to determine the number and residence of RQC negative children from the neighbourhood to be included in the second phase study.

The DICA-R interview was done on the same date as the RQC screening. The same interviewer respondent pair that exchanged information for the initial screening was also involved in the second phase screening. From the ubiquitous nature of the RQC items, from the complex nature of the DICA-R interview and from the naivety of both the interviewers and respondents to the concept of psychopathology, particularly in children, we presumed that it would be very unlikely that doing the two phases of the study on the same date and by the same people would lead to bias.

## 4.6 Statistics

Data was entered by an experienced clerk using the DICA software. After data entry, the DICA software automatically generated diagnoses for each subject where present or gave statements that no diagnoses were made based on its diagnostic algorithms according to DSM-III-R criteria. The results of the DICA software diagnostic algorithms were then exported to the Statistical Packages for Social Sciences (SPSS) program, version 11. For all papers, results were considered statistically significant if P-values were less than or equal to 5%.

### Paper I

To measure the validity parameters of the RQC, cross tabulation was done and the sensitivity, specificity, positive and negative predictive values, likelihood ratio for positive test (LR+), and the likelihood ratio for a negative test were calculated.

(LR) were calculated to test the RQC's ability to match with the DICA-R regarding overall diagnosis and regarding the diagnosis of the three main diagnostic groups: Disruptive behaviour disorders, Anxiety disorders and Elimination disorders. For a test result, the likelihood ratio is defined as the

ratio between the probability of observing that result in patients with the disorder in question and the probability of that result in subjects without the disorder in question. In addition, Receiver Operating Characteristic (ROC) curve analysis was usedto compare different cut-off levels of the RQC in differentiating cases from non-cases. We used chi square test to compare the frequencies of individual RQC items in cases, with those in non-cases. Chi square test was also used to compare the distribution of the ten screening items among cases of the two sexes. Additionally, discriminating power of individual RQC items was determined following the method described by the developers of the RQC (Giel et al. 1981). The discriminatory power of each item was calculated by dividing the frequency of positive responses in cases by the frequency of positive responses in non-cases.

## Paper II

Descriptive data analysis was performed followed by estimation of the weighted prevalence of specific mental and behavioural disorders, based on the relative size of the strata from which samples were taken. Logistic regression was used to estimate the correlation between socio-demographic variables and mental disorders. Thus being a case was included in the logistic model as a dependent variable. As independent variables, the following categorical variables were included in the model: sex, age, grade level, ethnicity, household size, extreme poverty and parental separation. Association with covariates was expressed using adjusted odds ratios and 95% confidence interval.

## Paper III

The significance of the relationship between enuresis and various socio-demographic variables as well as between enuresis and disruptive behaviour disorders (DBD) and anxiety disorders was assessed using logistic regression modelling. Enuresis was entered as the dependent variable while sex, age, educational grade, ethnicity, family size, parental separation, extreme poverty (defined as having severe difficulty covering costs of basics like food and clothing for the family), anxiety disorder group, and disruptive behaviour disorder groups were entered as independent variables in the logistic regression model.

## Paper IV

Logistic regression modelling was also used to estimate the association of socio-demograhic variables with DBD and with AD. The dependent variable in our study was 'being a case', and the following were independent variables: sex, age, grade level, ethnicity, household size, extreme poverty and single parent family. Adjusted odds ratios and 95% confidence intervals were used to show the significance of association between the dependent variable and individual correlates.

## 4.7 Ethical considerations

Ethical approval was obtained from the National Ethical Review Committee of the Science and Technology Commission in Ethiopia. Verbal consent was obtained from all parents.

Collecting sensitive health information for research purposes about children from parents or caretakers might be viewed as violation of persons' integrity. During data collection, parents or caretakers decided for themselves to give information about their children following verbal and written explanations given to them regarding the purpose and methods of the study. Therefore, participation of parents was with full informed consent. In order to compensate for the time they spent with the data collectors, parents were provided a sum amounting to a day's wage according to the minimum required wage of the time. The children 6-15 years of age were not approached but parents and caretakers were instructed to inform the children about the study. There were no obvious risks considered for those included in the study other than possible integrity violation. Data was coded when being analyzed. Only the responsible researchers had access to the code key. In the publications it was not possible to recognize individual cases and since the procedures guarantee confidentiality and anonymous presenting of data we think there are no major negative effects of the study. The interviewers were well trained to make interviews and senior supervisors of the study were present during data collection and parents got feed back if there were questions regarding any aspect of the interview.

Parents whose children were positive for any DSM-III-R diagnose were advised to contact the psychiatric hospital in Addis Ababa and to contact the principal investigator in case they found difficulty getting appropriate help. They were given telephone numbers if they would prefer not to come to the mental hospital. There were several telephone contacts of parents with the principal investigator but many parents who were appointed to come to the outpatient clinic were not willing to bring their children. However, parents of several cases of DBD were counselled and two cases of ADHD and a case of psychosis were followed for about three years with available intervention.

# 5 RESULTS

## Paper I

It was not possible to conduct the assessment in 47 (0.9%) of the initially selected houses for various reasons. 52.1% of the children screened with the RQC were females. Eight hundred and sixty four (17.3%) of the screened children were found to be positive for one or more RQC items. During the second phase of the study, the parents of all RQC positive children (RQC positive = child reported by parent as having one or more RQC item) plus the parents of 1537 RQC negative children (RQC negative = child reported by parent as having none of the RQC items) were assessed using the parent version of DICA-R. Thus 2401 children (51% females) were assessed with DICA-R. Participation in the second phase was 100%. The RQC positive to RQC negative ratio in the second phase sample was slightly less than the planned 1:2. The time taken to complete the DICA-R interview ranged between 70 to 110 minutes.

The ages of 81% of the children assessed for the second phase study were over seven years. Seventy-five percent of the second phase sample was in elementary grades and over 45% came from Amhara ethnic group. Over 12% of the children lived in homes with a household size of more than 10 members. Extreme poverty was present in the families of a third of the subjects. Twenty three percent of the second phase sample was from single-parent homes.

As shown in Table 6, the RQC items 'wetting/soiling', 'running away from home', and 'backwardness' were significantly more in male children, with P-values of 0.001, 0.023, and 0.025 respectively. On the other hand, the girls had higher frequency of the RQC item 'nervousness/scared for no reason' (P = 0.005). All other items were equally distributed between the genders.

**Table 6.** Distribution of individual RQC items among male and female cases.

| RQC item | Frequency | | P-value |
|---|---|---|---|
| | Male cases n (%) | Female cases n (%) | |
| 1. Speech disturbance | 21(1.8) | 20(1.6) | 0.119 |
| 2. Sleep disturbance | 16(1.6) | 22(1.8) | 0.093 |
| 3. Fits or falling for no reason | 10(0.9) | 10(0.8) | 0.176 |
| 4. Frequent headaches | 56(4.8) | 60(4.9) | 0.075 |
| 5. Running away from home | 28(2.4) | 17(1.4) | 0.023 |
| 6. Stealing | 40(3.4) | 35(2.8) | 0.068 |
| 7. Nervousness/scared for no reason | 59(5) | 89(7.2) | 0.005 |
| 8. Backward compared to age group | 42(3.6) | 30(2.4) | 0.025 |
| 9. Never playing with others | 59(5) | 58(4.7) | 0.071 |
| 10. Wetting/soiling | 273(23.3) | 226(18.4) | 0.001 |
| Total number of subjects | 1172 | 1229 | |

At a cut-off score of 1, the RQC had a sensitivity of 84% and a specificity of 83% for any DSM-III-R diagnosis. The other validity coefficients of the instrument for 'any diagnosis' at the same cut-off value were as follows: positive and negative predictive values were 65% and 93% respectively; the likelihood ratio+ and likelihood ratio- were 5 and 0.2 respectively; andthe misclassification rate was 17%.

The validity coefficients of the RQC for the categories of 'elimination disorders', 'anxiety disorders', and 'disruptive behaviour disorders' had similar patterns of changes to the category of 'any DICA diagnosis' with some variations. The Sensitivity of the RQC was very low for all identified individual DICA-R conditions except for enuresis.

Although the ROC curve analysis showed that the RQC could differentiate cases from non-cases to a significant level at cut-off scores 1, 2, and 3, only the cut-off score of 1 showed remarkable discriminating ability, as shown by a marked drop in the 95% confidence interval as the cut–off score got higher than 1.

Except for the item 'fits or falling for no reason', all RQC items were significantly more frequent in cases than non-cases. In spite of wetting/soiling being the most frequently reported item in the subjects, the item 'nervousness or being scared for no reason' was the one with the highest discriminating power among the ten items.

## Paper II

Of the 2401 children, 668 (27.8%) were identified as having any of the DSM-III-R diagnoses included in the DICA-R while the weighted prevalence for any DSM-III-R diagnosis was 17%, which was evenly distributed between both sexes. From the 668 children with any DICA-R diagnosis, 94 (2.3%) had more than one diagnoses. The maximum number of diagnoses per child was four.

Positive findings were obtained for only twelve conditions among the DSM-III-R diagnoses included in the DICA-R. Of these, enuresis had the highest prevalence (Weighted prevalence = 12.3%) followed by simple phobia (Weighted prevalence = 5.5%). All of the remaining identified DSM-III-R conditions had prevalence rates less than 1%. These were oppositional defiant disorder (0.7%), separation anxiety disorder (0.4%), conduct disorder and encopresis (0.3% each), psychosis (0.2%), substance abuse disorder (0.1%), attention deficit hyper activity disorder (0.1%), obsessive compulsive disorder (0.1%), gender identity disorder (0.02%), and post traumatic stress disorder (0.03%).

The identified diagnoses were regrouped into three major clusters for efficient statistical analyses. Accordingly, attention deficit hyperactivity disorder, conduct disorder, and oppositional defiant disorder were grouped together under 'Disruptive behaviour disorders' (DBD). Simple phobia, separation anxiety, obsessive compulsive disorder, and post traumatic stress disorder were categorized under 'Anxiety Disorders' (AD). The third group was 'Elimination Disorder', which consisted of enuresis and encopresis. The remaining three conditions, which couldn't be grouped because of too few cases, were excluded from the analysis.

The weighted prevalence rates for the three categories were DBD 0.8%, AD 5.6%, and elimination disorders 12.3%. Age, extreme poverty, and single parenthood were independently associated with any DSM-III-R diagnosis.

## Paper III

The adjusted odds of having enuresis were 25% lower in female children compared to males [Adjusted Odds Ratio (Adj. OR) (95% Confidence Interval (CI) = 0.76 (0.62, 0.93)]. The prevalence of enuresis decreased with increasing age. This trend was statistically significant (P for trend = <0.001). The chances of having enuresis dropped significantly in high school children compared to children who had not been to school [Adj. OR (95% CI) = 0.55 (0.32, 0.95)]. There was a significant trend also in the association of higher grades and decreasing chances for enuresis (P for trend = 0.006). The observed prevalence of enuresis showed no variations among ethnic groups as well as among household sizes.

Parental worry about substantial financial shortage or extreme poverty was found to be significantly associated with enuresis, with an almost 30% higher chance of having enuresis in those children coming from families with such economic problems [Adj. OR (95% CI) = 1.29 (1.04, 1.60)]. The other factor that was closely linked with the occurrence of enuresis was parental separation. Children from single-parent families were found to have a higher risk of enuresis compared to those children living with both parents [Adj. OR (95% CI) = 1.41 (1.11, 1.80)].

Compared to those without AD, children with that disorders had an almost 60% higher risk of having enuresis [Adj. OR (95% CI) = 1.59 (1.14, 2.21)]. Likewise, children with disruptive behaviour disorders had more than twice the risk of having enuresis compared to children who did not have that condition [Adj. OR (95% CI) = 2.20 (1.10, 4.50)].

## Paper IV

The association of DBD with sex was statistically significant, with the odds of caseness being 66% less among the girls compared to boys [Adj. OR (95% CI) = 0.34 (0.16, 0.74)]. Although the adjusted odds of being a case was twice as high in the age group 12-15 compared to the reference group of 6-7 years, it did not achieve statistical significance. The same was true for single parent family, where the adjusted odds ratio was not statistically significant despite an 80% increase in risk compared to both-parent-families. Sex was also associated with anxiety disorders. Females were at higher risk of being cases than males [Adj. OR (95%CI) = 1.46 (1.09-1.96)]. The risk of having anxiety disorders was also found to be higher in those children from Tigre ethnic group [Adj. OR (95% CI) = 1.78 (1.07, 2.93)]. The children from families where the parents are in extreme poverty also had a 50% higher risk of having anxiety than the reference group [Adj. OR (95% CI) = 1.55 (1.15, 2.09)].

# 6 DISCUSSIONS

### Paper I

In spite of their limitations, checklists are useful, among other things, for community screening (Brunshaw and Szatmari 1988). Although the field of psychiatry lacks a gold standard or 'an instrument that makes correct diagnosis without error', structured interviews and semi-structured interviews are the closest to the 'gold standard' (Brunshaw et al. 1988). Structured interviews are said to be better than unaided clinical interviews because of the pronness of the latter to subjective bias (Angold and Costello 2000). Because of this, we chose to use DICA-R as a gold standard to evaluate the validity of the RQC screening instrument.

The screening and the diagnostic interview were done on the same day. This could give the impression that the process might have biased the results of the agreement evaluation. However, the likelihood of such bias is rare. There are several reasons that make such bias unlikely. The two instruments vary widely in their criteria. Although the RQC has only ten items, these items are universal symptoms present in many disorders, making it impossible for any lay person to guess any diagnosis. Furthermore, the DICA-R is composed of more than 400 queries that are new to most of the respondents. The interviewers couldn't know the diagnosis made by the DICA-R interview because they were not trained to identify diagnoses but to correctly administer the individual questions. The diagnoses of the DICA-R were not apparent in the interview for the lay interviewers. The diagnoses were made later by the DICA software after data entry.

The distribution of the RQC items between the genders is similar to the report in the literature, where nervousness or anxiety is more common in girls (Klein and Pine 2002) while elimination disorders (Clayden et al. 2002) and behaviour disorders (Maughan et al. 2004) are more prevalent in boys.

All the validity parameters of the RQC in this study were found to be acceptable. The ROC curve analysis also proved that the RQC had good capacity to discriminate cases from non-cases at the recommended cut-off score of 1. Moreover, the RQC had moderate likelihood ratio results for both positive results (LR+) and negative results (LR-). The likelihood ratios is derived from sensitivity and specificity but has greater advantage than sensitivity and specificity in that the likelihood ratio informs on the likelihood of having a positive result in the screen-positive subjects as compared to the likelihood of having that result in the screen-negative subjects. The sensitivity and specificity of the RQC were also found to be acceptable in an earlier study in Ethiopia (Tadesse et al. 1999) in which parents were interviewed by a psychiatrist in the second phase.

One of the advantages of brief checklists like RQC is that they enable both interviewer and interviewee to be focused by avoiding fatigue and nonchalance, behaviour that can be the result of long screenings procedure. However, the small number of items needs to cover as many syndromes as possible in the spectrum of psychiatric disorders (Cunningham 1971). This issue was the primary concern of the producers of the RQC (Giel et al. 1981). Brief screenings will be much more recommended for community use in countries like Ethiopia where adults have to labour daily to secure earnings in the scarce job market. To date, the RQC is the only such screen that has been in use in Ethiopia.

The RQC, despite its limitations, is a simple and short screen that has been repeatedly used in community studies in Ethiopia. It has also been found capable of picking potential cases of psychiatric disorders. On the other hand, even though psychiatric disorders affect many children, mental health in general (child mental disorders in particular) are neglected by health workers while assessing patients. One of the problems of health care in Ethiopia is the shortage of professionals, making optimal allocation of time to each patient impossible. In such cases, the familiar RQC can be handy in gaining the will and interest of the workers in assessing presenting children for possible psychopathology.

Therefore, while the Ethiopian health care system waits to be familiar with the more modern and more robust rating scales, the already available and simple RQC can be used as a stepping-stone in introducing child psychiatric assessment in primary care in Ethiopia. However, the use of the questionnaire needs to be accompanied with some sort of guidance to primary care workers on how to proceed when and if they identify an RQC item in a child.

## Paper II

Research has shown that psychopathology is present in up to 27% of children in the community (Ani and Garralda 2005, Weitzman and Levanthal 2006). Moreover, it is known that a considerable proportion of children attending primary care (Kramer and Garralda 1998) and an even greater proportion of children seen at paediatric clinics for somatic symptoms suffer from psychopathology (Costello et al. 1988).

This study is the first in Ethiopia to assess the agreement between a screening instrument and a semi-structured interview for children based on a standard international nomenclature.

Of the 17% overall prevalence rate, the majority (over 12%) belong to elimination disorders. All other identified conditions, except for phobia, had a rate less than 1%. The prevalence rate for any disorder is much higher in the urban than in the rural children. This is mainly because of the higher preponderance of enuresis.

The total absence of mood disorders from the children in Addis Ababa in this study was beyond our expectation. Depression was identified in Ethiopia both in adults and in children, albeit with lower rates than in the literature. In rural children, a study using DICA-R found major depression in 0.9% and dysthymia in 0.4% of children (Ashenafi et al. 2001). In Addis Ababa, a study done on child labourers and controls using DICA-R found the prevalence of depression to be 4.9% in the child labour group but only 0.8% in the control schoolchildren (Fekadu et al. 2006). A study, conducted 10 years ago on adults in Addis Ababa by multistage assessment of a randomly selected sample of 10000 subjects, had reported that the prevalence of depressive disorder was lower than rates reported from the north (Kebede and Alem 1999). The earlier studies on child mental health in Ethiopia did not report on mood disorders but on psychoneurosis or dimensional conditions like "emotional disorders", making it difficult to compare results.

The pattern of reporting of earlier studies from other African countries was also to use the terms psychoneurosis/emotional disorder, an approach that made it difficult to understand what proportion of the studied populations had mood disorders. However, although rates have been lower than in the north, depressive disorders are considered mental health problems in African children (German 1987). Latter African studies have reported on depressive symptoms. In 1995, a two-stage study in Nigeria used a modified version of the Children's Behaviour Checklist in the second stage and found the item 'miserable/unhappy/tearful' in 36.4% of screen-positive children and in 8.9% of the screen-negative children (Omigbodun et al. 1996). More recently, 9% of 13-18 year-old children in Nigeria suffer from depression (Adewuya and Ologun 2006).

A recent review of the pattern of in patient psychiatric morbidity in Ethiopia showed that nearly 2% of 1564 psychiatric admissions to a psychiatric hospital in Addis Ababa involved children below 16 years of age. The analysis of clinical profile of admissions showed that 32% of diagnoses made on the wards belonged to the group of affective disorders, of which 21% were bipolar and 12% depressive disorders. However, no information was provided in the report regarding the proportion of children among the patients with affective disorders (Fekadu et al. 2007).

It is possible that cultural factors prevented parents from reporting mood disorders in their children. In Ethiopia, there are traditionally two opposing notions with regard to the expression of mood. Secular notions are such that people are discouraged from expressing sad emotions and that depressed states are signs of weakness caused by the individual himself or herself. On the other hand, it is common to hear religious authorities preach that people should leave in sorrow and look down on themselves in order to constantly remind themselves of their timidity in the face of the Almighty. Being proud about self and showing joyfulness is said to lead to sin and ultimately to hell. Even religious songs with fast beats are extremely discouraged by the

authorities of the largest Christian denomination because a fast beat is said to create elated mood, a state believed by the clergy to lead to sinful temptations. Both of these traditional notions could hinder overt expression of mood states. In the former case, parents may not feel comfortable with showing signs of weakness in their child while in the latter notion the devout believer may take sadness or low self esteem in their child as a normal desirable behaviour that has nothing to do with an abnormality.

It is also possible that the low prevalence rates may be true population characteristics. If so, it will be very important to investigate the protective factors in Ethiopian populations. One possible factor can be the acceptance of circumstances by the society. Although one is encouraged to aspire for a better life, one is also strongly advised to accept adverse circumstances because whatever happens is the will of God. This very popular phenomenon, a teaching of all of the religions in the country, can possibly deter feelings of frustration, resentment and anger, thus preventing emotional upsets in the affected person. The low rates of emotional problems could also have been influenced by the availability of emotional support from the extended families. Further research is necessary to understand the factors associated with the low rates of psychiatric disorders in this population. The lower detection of emotional problems in children can probably be attributed to the use of parents alone as source of information. It has been reported that while parents can detect behaviour problem in their children, older children and adolescents are better than parents in detecting internalizing symptoms (Herjanic and Reich 1982).

Apart from the similarities in the low rates of mood disorders, prevalence rates reported by the studies on child psychopathology in Ethiopia were varying. In addition to differences in methodologies, the studies also differed in their respective site of studies. The difference in area of study obviously entails variation in cultural notions and practices, among other things. It has been reported that cultural variations in child rearing practices and other societal phenomena do influence psychopathology in children as well as in adults (Weisz et al. 1993).

According to studies from Europe, the prevalence rates of externalizing disorders are said to be between 4% and 23% (Andrés et al. 1999). The reason for the low rates of behavioural disorders in our sample can be due to cultural tolerance by society (Dwivedi and Banhatti 2005). It is also possible that rates of disruptive behaviour can be low due to cultural intolerance. As reported by studies that observed Indian societies, children could manifest fewer behaviour symptoms when they conform to stern parental expectations (Hackett and Hackett 1993, Atzaba-Poria et al. 2004).

Overall, the prevalence of specific childhood psychiatric disorders in Ethiopia appears to be lower than the rates in the literature. Further research is necessary to determine whether this finding is a true population difference or

whether the result is due to lack of awareness or whether this variation from the literature resulted from methodological factors.

## Paper III

Enuresis as the condition of highest prevalence has also been reported by researchers in Ethiopia (Giel et al. 1969, Fekadu et al. 2006) and elsewhere (Srinath et al. 2005). The prevalence of enuresis was also reported to be higher in Sudanese children than rates for European children (Rahim and Cederblad 1986).

Enuresis was found to be more prevalent in urban Ethiopian children in this study as compared to their rural compatriots from a previous report (Desta et al. 2007). This difference could result from various possibilities. Among possible factors is the fact that rural infants and toddlers sleep with their parents because of lack of adequate sleeping materials while many urban homes have separate cots for the infant and small child. The rural parents might be toilet training their children earlier out of their own discomfort from the child's wetting. This factor was also suggested from China (Liu et al. 2000). Rural parents might also be unable to notice the occurrence of enuresis in older children because as opposed to most urban kids who sleep on their beds, rural older children sleep on the earthen floor on hay-mattress, a situation that reduces recognition of wetting. In addition, families of many rural homes spend the night in the same room with their animals. The smell from the excreta from the animals can therefore camouflage that from the child's wetting, making it even more difficult to detect bedwetting.

The higher prevalence of DBD in our subjects with enuresis is similar to most other reports from around the world. After doing a literature review of epidemiological and clinical studies that looked into the association between enuresis and psychopathology in the paediatric age group, scholars from Belgium have recently reported that most of the reviewed reports suggested that there was an increased prevalence of behavioural disorders in general and attention deficit hyperactivity disorders in particular (Baeyens et al. 2005). This majority finding is, however, challenged by some articles that reported no association between enuresis and psychopathology (Wille and Anveden 1995, Friman et al. 1998).

The argument over the significant association between enuresis and psychopathology has been ongoing for decades. A review of earlier studies on the association between enuresis and psychopathology was reported in 1989 (Moffatt 1989). Although all of the five studies Moffatt reviewed had limitations, four had reported higher rates of psychopathology in children with enuresis. Among the conclusions of this review (Moffatt 1989) was that enuresis was associated with behavioural abnormalities. Moffatt (Moffatt 1989) noted that behaviour problems were more in children with enuresis who sought help. This would imply that the reports of associations between enuresis and psychopathology based on clinical samples could be biased.

However, higher prevalence rates of psychopathology in children with enuresis as compared to children without this condition were also reported in population-based studies (Byrd et al. 1996, Moilanen et al. 1998, Liu et al. 2000, Hackett et al. 2001).

In spite of the significant associations between enuresis and psychopathology in many studies, a cause-effect relationship has not yet been established. It is argued by some that the excess behaviour problem seen in children with enuresis is a result of the distress that follows the shame and stigma (Fergusson and Horwood 1994). Studies have been carried out to see whether the behaviour problems disappear with behavioural treatment of the enuresis. A review of seven studies focusing on differences between levels of pre and post enuresis treatment behaviour problems (Moffatt 1989) concluded that although only two of the reviewed papers had the best experimental designs and that these two studies reported no post-enuresis treatment changes, the problems in sample size of these two studies made conclusions unclear. Therefore, it was recommended to accept the majority finding that self concept improved after treatment (Moffatt 1989). In a controlled Swedish study (Hagglof et al. 1998), self esteem was also found to be significantly lower in children with enuresis than in controls, and that self esteem improved markedly after treatment with either enuresis alarm or desmopressin. However, studies have not yet been done to assess the converse of this notion. In other words, the question whether treating the behavioural problems in those behaviourally disturbed children with enuresis can improve the problem of enuresis is yet to be answered.

In this study, AD was also found to be more in children with enuresis than in those without the condition. Although behaviour problems are said to be the psychopathology associated with enuresis by most of the literature reports, there are some who reported the preponderance of neuroticism and lower conscientiousness (Van Hoecke et al. 2006). Anxiety/social withdrawal was also found to be higher in adolescents with enuresis (Fergusson and Horwood 1994).

The co-occurrence of enuresis and psychopathology in children has been shown to be significant in studies in Ethiopia and elsewhere. The repeated findings indicate the need for a multi-faceted approach in the management of enuresis. Psychiatric referral may not be necessary for all cases of enuresis. However, health workers need to address both physical and mental aspects in the assessment (Fergusson et al. 1994, Byrd et al. 1996) as well as in the treatment (Liu and Horwood 2000) of children with enuresis.

## Paper IV

Among the commonest problems in children referred for mental health intervention are DBD (Volkmar 2002). While they have been intensely investigated in developed countries, information on DBD in developing

countries is scarce (Earls and Mezzacappa 2002). In two paediatric clinic populations in South Africa, where the majority of subjects were black children, the most common complaints were behavioural problems including temper tantrums, sexual behaviour, aggressive and destructive behaviour, and stealing and lying (Vogel and Holford 1999). This finding is similar to reports from the west (Grizenko and Pauliuk 1994).

In a study of co-morbidity, time to recovery, rate of chronicity, and probability of recurrence in children with DBD in the United States, it was found that the condition still was evident after 15 years of initial diagnosis in 14% of the children (Keller et al. 1992). It is important to identify and act early on factors associated with DBD in order to reduce the risk for children with such disorders of developing different antisocial behaviour as adults (Keller et al. 1992, Grizenko and Pauliuk 1994).

Although there is consensus in the preponderance in male children of ADHD (Schachar and Tannock 2002), inconsistency of definitions and methodologies cause wide variation in reports regarding gender and age correlations in ODD and CD (Maughan et al. 2004). There are many who, like in our study, found that conduct and oppositional disorders (Loeber et al. 2000, Maughan et al. 2004) to be higher in male children than in girls. The inconsistency in correlates of DBD continues with the findings of a recent study of correlates of DBD in Puerto Rico where the association of age and gender with DBD was found to have a three-way interaction (age by gender by site). In one site, rate of DBD increased as the females' age increased, but this stayed the same for males. In the second site, the rate of DBD increased with age for the males but stayed the same for the females. In this Puerto Rican study, many established correlates - including parental disciplining and tolerance, child's early difficult temperament, verbal/physical abuse, etc. - were found to have significant crude odds ratio, but lacked significance when the odds ratio was adjusted (Bird et al. 2006). In Kinshasa, Congo, a study that used the hyperactivity-inattention subscale (HI) of the Strength and Difficulties Questionnaire (SDQ) found no age and gender difference between cases and non-cases (Kashala et al. 2006). Reports from the industrialized West on prevalence of DBD over time hint that the difference between genders is narrowing with an increase in the prevalence of delinquency in girls (Loeber et al. 2000).

DBD were also said to be more prevalent in children from families of low socioeconomic status (Loeber et al. 2000). In our study, the prevalence of DBD was not significantly affected by extreme poverty in the family.

The significant correlation between gender and AD in this study is similar to findings in the literature. In fact, this correlation is the single most consistent across studies and cultures (Klein and Pine 2002). Economic disadvantage of the family is also mentioned as a risk factor by some studies (Costello et al. 1996), but there is no consistency in the literature (Klein and Pine 2002). AD

was also found to be more prevalent in African Americans than in White Americans (Costello et al. 1996). Except for single parenthood, other factors that have been inconsistently mentioned as risks for AD in other studies were not included as covariates in the logistic regression analysis in our study. These factors include school failure, family dysfunction, stressful life events, parental emotional problems, and low parental education (Klein and Pine. 2002).

Childhood anxiety disorders are common but treatable problems (Klein and Pine 2002). Untreated, these disorders can persist into adulthood and cause dysfunction (Castellanos et al. 1999). The group of AD in this report is composed of simple phobia, separation anxiety, post traumatic stress disorder, and obsessive compulsive disorder. The other members of this AD in the literature, panic and generalized anxiety, were not diagnosed. Child health and educational services in Ethiopia should give priority to planning for activities to understand the extent and types of behavioural and emotional problems in the growing person. Only then can we help our children grow optimally in their personal, social, as well as cognitive functions.

# 7 OVERALL CONCLUSIONS AND RECOMMENDATIONS

There can be various reasons for the inconclusive outcomes in child psychiatry in Ethiopia. The major factor appears to be the lack of awareness regarding the role played by biological, social and psychological factors in the causation, maintenance, and aggravation of mental or behavioural problems. The majority of people in this country still attribute mental problems to supernatural forces that are beyond the influence of humans other than through practicing the rituals prescribed in the respective belief system one belongs to. This notion has led some religious authorities to openly discourage people from involving in any medical service regarding behavioural aberrations in themselves or in their family members. This notion has been observed even among health workers. During the past two decades that I have been working as a mental health practitioner, I have met numerous patients who suffered for years from easily treatable but disabling depression before seeking help because they had been discouraged by health workers, sometimes even by physicians and nurses, from seeking medical or psychological alternatives for their mental illness. Patients are instead advised to just pray and try to live according to the scriptures of a particular religion. This prevalent attitude could possibly have led to the lack in the support of research in mental health. A good example of the depth of such inhibiting attitude can be what I witnessed in one of the teaching hospital in Ethiopia nine years ago. An intern was found kneeling and praying by the bedside of a child having status attacks of tonic clonic seizures. The intern could have easily solved the convulsions with available treatment, but her belief regarding this epilepsy-like condition was that the problem resulted following possession by evil spirits and that the treatment should be prayer to drive the evil spirit out of the child. Such adherence to beliefs in supernatural-only causation and cure for illnesses in Africans irrespective of their educational level (Odejide et al. 1989). The child's continuous convulsions were stopped on the spot after a shot of diazepam by other staff. Discussions with the nurses on the ward revealed that the intern was active in advising psychotic patients to avoid their medicines and go to prayer sites instead. It was later possible to change the attitude and practice of the intern following discussions on the grounds of evidence based medicine. After a few sessions, the intern had new notion that medications are God's gift to humans and that God wouldn't like it if we fail to use the knowledge He had given us to help suffering patients.

The second factor is an extension of the first factor and concerns the traditional attitude regarding children. Traditionally, children are said to grow and be mainly protected not by the careful handling of their special needs by responsible adults but by the care of their vigilant guardian angels. When a child befalls some physical or behavioural problem, the parents would ignore the situation because of the belief that it would be looked after by the guardian angel. If the parents decide to seek help, it would be to ask for mercy from the supernatural forces.

Lack of skilled manpower and services in the area of child mental health in particular is a corollary of the first two factors that obviously have been contributing to the lack of inappropriate planning and execution of information gathering and dissemination within the health care system. When medical services are inefficient in their management of child behavioural problems, it leads to the formation of the notion in parents, as well as in policy makers, that there is no use in investing in training, research or service for a discipline that bears no fruit.

Bringing forward positive transformation in the first two factors will probably take decades. Even in the industrialized world, change in public attitude regarding child mental health occurred slowly over centuries (Tyano and Keren 2005). On the other hand, current global situations are favourable to change the status quo in Ethiopia with regard to the last factor. An observable change in the last factor will definitely lead to changes in the first two factors.

The late arriving epidemiology of child psychiatry has benefited from developments in the epidemiology of other fields of medicine (Costello et al. 2005). I think that African child psychiatry can and should exploit the abundance of knowledge resources available from the advanced corners of the world. Gone are the days when Africa stayed in the dark because of lack of access to information. With the advance of easy communication, it is now possible to communicate with different centres that can and are willing to share and work together. In our research plans, African mental health workers should follow colleagues in other continents by giving up our enduring search for non-specific and non-informative global 'psychopathology' and work towards looking into specific problems of our patients. The future should be towards asking ourselves these questions: "What problems or groups of problems do we see in our patients?"; "How does the society interpret those problems?"; "How do the problems correlate with each other in individual patients?"; "What circumstances in the person or in the environment are associated with the occurrence, aggravation, or mitigation of those problems?"; "How dysfunctional has the individual become due to the problem compared to his/her life without the problem?"; and "What the impact of interventions on those problems are?". Only by addressing such issues can we make society benefit from our research activities. Only then will society see that the field is beneficial. If and when society starts enjoying the benefits, attitudes will change and do so for good. This is the trend that I have been observing in this country. When a traditional/religious healer gains prominence from being advertised as a good healer, that healer is revered and respected even by the fanatic followers of religions fundamentally opposite to the healer's belief.

Guided by evidence-based practices, psychiatry in general and child psychiatry in particular, can change its outlier position in the health care system of the country. Therefore, researchers, trainers, and service providers in Ethiopia

should join hands to make timely use of the internationally created opportunity to change the situation of child mental health in the country.

The global facts indicate the occurrence of considerable rates of different behavioural and mental problems in children. Given the disabling complications of untreated behavioural and emotional disorders in children, given the vital role that Ethiopian children have in the nation's economic development, policy makers, health workers and all who are working towards the welfare of children should see to it that programmes for the psychosocial well being of children should be part of their routine activities. For the Ministry of Health and mental health institutions, the forerunner of such activities should be the investigation of the knowledge, attitude and practice of the society regarding prevailing behavioural or mental problems in children. Such information will be important for planning efficient interventions. This activity seems quite difficult to achieve because of the lack of research armaments in the vast majority of health care institutions. Therefore, a gradual introduction of data collection, recording, and reporting system is required. One of the possibilities for such graded exposure can be to make use of the simple RQC interview a routine in child health care clinics. According to the recommendations of the developers of the RQC, a screen-positive child needs to be assessed by a follow up interview (Giel et al. 1981). It will therefore be necessary to prepare a similar but simple follow-up tool in order to enable Ethiopian primary care health workers to decide on the management of potential cases. Incidentally, I fully agree with recommendations for African researchers to use more modern instruments (Minde 1994). It is by doing so that we can address the issues that I suggested above. However, already existing and simple tools such as the RQC can be used as starters for involving non-mental health primary care workers.

# 8 IMPLICATIONS OF THIS STUDY FOR ETHIOPIA'S HEALTH SERVICE

This study highlights the paucity of knowledge regarding the mental state of children in Ethiopia. Research around the world has shown that the types of child psychiatric disorders are similar although their rates show variations among nations. However, our finding indicates that the types are fewer and rates of different psychopathologies are lower than even other African findings. This indicates the necessity for replication of similar epidemiologic studies using similar or other more modern methods in order to guide decision making at policy level and to enable health workers design and implement appropriate services.

The findings regarding socio-demographic correlates of child psychopathology in this study were similar to findings of many studies around the world. This implies that there is a need to consider intervention measures. The effort to reduce poverty is one such measure that needs to be advanced.

The obvious low public mental health awareness and some of the alternative traditional religious notions regarding various aspects of behaviour problems make the acceptance of the medical alternative difficult. This is a very important observation that needs to be addressed by health workers, particularly mental health workers in Ethiopia. A mechanism of regular public health education needs to be set up and followed with regular evaluations of outcome and impact.

The health care system also needs to make relationship with traditional and religious healers for exchange of information and mutual trainings. Since these healers are highly respected by the society, they can, with appropriate training, be used as sources of referral and for public health training.

## 9 LIMITATIONS

This study is the first of its kind in Ethiopia. Whenever something is practiced for the first time, adaptation problems can lead to errors. Although the study site was selected for its representativeness of ethnic groups, the study is also a cross sectional study done in a relatively affluent area constituting about 4% of a country, which is among the poorest of the poor in the world. Therefore, it is necessary to replicate similar studies in various localities before generalizations can be made confidently.

Analysis was made in this study based on information obtained from parents alone. Although mothers could be better informants regarding children's behaviour in this country because of awareness and factors mentioned in the methodology part of this book, research has shown that multi-informant data give a better understanding of the child due to the tendency in children to behave differently in different settings. It is known that children's behaviour differs depending on their setting, such as home and school (Myers and Winters 2002). As the majority of children assessed were attending school, the quality of the results would have been better had information been obtained from parents as well as from teachers.

The other limitation of this study, like all child psychiatric research in Africa, is that the study is done in a setting where public awareness particularly about child mental health, is lacking. Most respondents were most probably unaware of the items of the DICA-R that they were asked to report about regarding their children. This condition could also limit the quality of the data.

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# 12 SUMMARY IN AMHARIC

### የህጻናት የባህርይ ችግር በአዲስ አበባ

እድሜያቸው ከ18 አመት በታች የሆኑ ስዎች ሁሉ በልጅነት ወይም በጻንነት እንደሚፈረጁ ይታወቃል:: በአለም ዙሪያ በተደጋጋሚ የተደረጉ ጥናቶች እንዳረገገጡት በማንኛውም ህብረተሰብ ውስጥ ከሚገኙት ህጻናት ከመቶ አስራአምስቱ በተለያየ የባህርይ ችግር ይጠቃሉ:: የአንድ ህጻን የባህርይ ችግር በጻኑ፣ በቤተሰቡና በማህበረሰቡ ላይ የተለያዩ ችግሮችን ያስከትላል:: አልፎ ተርፎም በሃገር ኢኮኖሚ ላይ ከፍተኛ ጉዳትን እንደሚያስከትል ተረጋግጧል:: ይህ ሃቅ የአለም መንግስታትን በማሳስቡ የተባበሩት መንግስታት ድርጅት ተደጋጋሚ ቅስቀሳዎችን አድርጎ ሃገራት የህጻናት ዜጎቻቸውን የአእምሮ ጤና የሚጠበቅበትን ሁኔታ እንዲያመቻቹ በመወስኑ ብዙ ሃገራት ለዚሁ ጉዳይ ከፍተኛ እንቅስቃሴ ሲያደርጉ አመታት አልፈዋል::

አለም በዚህ አይነት እንቅስቃሴ ላይ ቢሆንም በኢትዮጵያ ግን ለጉዳዩ ምንም ትኩረት ሳይሰጠው ቆይቷል:: ለህጻናትና ወጣቶች የባህርይ ችግር መከላከያም ሆነ በችግሩ ያሉትን መርጃ ምንም አይነት ዝግጅት ኖር አያውቅም:: እንደኢትዮጵያ ባሉ ድሃ ሃገራት ከሚኖሩት ዜጎች ከግማሽ በላይ የሚሆኑት እድሜያቸው ከ18 አመት በታች ናቸው:: በመሆኑም ህጻናት በግብርናውም ሆነ በሌሎች የምርት እንቅስቃሴዎች ከፍተኛ አስተዋጽኦ የሚያደርጉ መሆኑ ግልጽ ነው:: ታዲያ የአንድ ህጻንን የጤንነት ችግሮች በተለያዩ የባህርዩን ችግር በማወቅ ለችግሩ ወቅታዊ መፍትሄ መፈለግ ካልተቻለ መዘዙ ከህጹንና አብረ ከሚኖሩት አልፎ ለሃገር ልማት እድገት የሚደረገውን ጥረት በከፍተኛ ደረጃ ያዳክመዋል::

ይህንን እስካሁን ቸል ተብሎ የነበረውን የህጻናት የባህርይ ሁኔታ በተወሰነ ደረጃ ለመገመት የሚያስችል ጥናት ከአምስት አመታት በፊት በአዲስ አበባ ከተማ ተደርጎ ነበር:: የጥናቱ ግንኙቾች ከ9 አመታ በፊት በቡታጀራ ከተደረገው ጥናትና ከሌሎች የኢትዮጵያ አካባቢዎችና ከሌሎች ሃገራት ግንኙቾች ጋር በማወዳደር የተገኘው ውጤት ተጠናቅሮ በዚህ ሪፖርት ቀርቦአል:: ጥናቱ የተከናወነው ለሳይንሳዊ ምርምር የሚያስፈልጉት ሁኔታዎች መሟዋላታቸው በብሄራዊ ሳይንስና ቴክኖሎጂ ኤጀንሲ ከተረጋገጠና ከተፈቀደ በሁዋላ ከመሆኑም በላይ ጥናቱ በታቀደው መስረት ለመከናወኑ ጥብቅ ክትትል ተደርጎ ነበር:: መርጃ የተወሰደው የከተማውን ህጻናት ሲወክሉ የሚችሉ እድሜያቸው ከ6 እስከ 15 የሆኑ 5000ህጻናት በእጣ ከሁሉም ወረዳዎች በሳይንሳዊ ዘዴ ከተመረጡ በሁዋላ የነኚህ ህጻናት ወላጆችን በሁለት ደረጃ ኢንተርቪው በማድረግ ነበር::

በጥናቱ ውጤት መስረት ሌት ሺንትን ወይም ስገራን የመሳት ችግር ያለባቸውን ሳይጨምር ከመቶ ህጻናት ስምንት ያህሉ የተለያየ የባህርይ ችግር ተገኝቶባቸዋል:: ወላጆች በስጡት መርጃ መስረት በህጻናት ላይ የታዩት የባህርይ ችግሮች የሚከተሉት ናቸው፣ 1) ምክንያት የለሽ ፍርሃት 2) ከፍተኛ መንቀሳቀሻሪ ትኩረት ማድረግ አለመቻል 3) አጥፊነትና ተንኮለኛነት 4) አኩራፊነት፣ ተጨቃጨቂነትና አምቢተኛነት 5) ከቤተሰብ ሲለዩ ከፍተኛ መረበሽ ወይም መጨነቅ 6) ከፍተኛ የአእምሮ መቃወስ 7) የሱስኝነት ችግር 8) በደረሰባቸው አደጋ ወይም ጥቃት የተነሳ የተፈጠረ ከፍተኛ መረበሽ 9) የራስ ማንነትን በተመለከተ ግራ በመጋባት የተፈተረ መረበሽ ናቸው:: በሌሎች ሃገራት ከተገኙት ውጤቶች ጋር ሲወዳደር በአዲስ አበባ ህጻናት ላይ የተገኘው የባህርይ ችግር በአይነትና ስርጭት በጣም አንስተኛ ነው:: በአለም ዙሪያ በጣም ብዙ ህጻናትን የሚያጠቁ የድብርትና ተጉዋዳኝ ችግሮች በዚህ ጥናት ወቅት በአዲስ አበባ ህጻናት ላይ አልተገኙም::

የባህርይ ችግር ያለባቸው ህጻናት የባህርይ ችግር ከሌለባቸው ጋር ሲወዳደሩ የባህርይ ችግር ያለባቸው ህጻናት የሚከተሉት ሁኔታዎች በብዛት ይታይባቸዋል፤ ሀ) ወንደቹ ናቸው ለ) ወላጆቻቸው ተለያይተዋል ሐ) በቤተሰባቸው መሰረታዊ ነገሮችን እንኩዋ ለማሟዋላት ከፍተኛ የገንዘብ ችግር አለ:: በወላጆች ቃል መሰረት እድሜያቸው ከ6 እስከ 15 ዓመት ከሆናቸው ህጻናት ከመቶው አስራሁለቱ ሌሊት በመኝታቸው ላይ ሽንታቸውን ይስታሉ:: ይህ ችግር ያለባቸው ህጻናት ችግሩ ከሌለባቸው ህጻናት የበለጠ በባህርይ ችግር የተጠቁ ሆነው ተገኝተዋል:: ምክንያት የለሸ ፍርሃት በብዛት የታየው በሴት ህጻናት ላይ ነው::

**የጥናቱ ውጤት አንድምታ:-** በአዲስ አበባና በቡታጃራ የተገኙ መረጃዎች ከአለም ዙሪያ ከተገኙት ሲነጻጸሩ አንድም የኢትዮጵያ ህጻናት በባህረና አእምሮ ችግር የመጠቃታቸው እድል ከሌሎች ሃገራት ህጻናት ያነሰ ይመስላል፤ አንድም ሳይንሳዊው የባህርይና የአእምሮ ችግር ግንዛቤ ለኢትዮጵያ ህብረተሰብ አዲስ በመሆኑ ወላጆች ስለልጆቻቸው ትክክለኛውን መረጃ ሊሰጡ ያልቻሉ ይመስላል:: ውጤቶቹ ከነባራዊ ሁኔታዎች አንጻር በጥልቀት ከተመረመሩ በሁዋላ የተደረሰበት ድምዳሜ የሁዋለኛው አንድምታ የበለጠ ተአማኒነት እንዳለው ታይቷል:: ስለዚህ ሳይንሳዊ ግንዛቤው በህብረተሰቡ እንዲሰራጭ የጤና ባለሙያዎችና የህጻናት ደህንነትን በመንከባከብ ስራ ላይ የተሰማሩ አካላት ሁሉ በመደበኛ የስራ ፕሮግራማቸው ቦታ ስጥተውት በአቅድ እንዲንቀሳቀሱ ይመክራል:: ህጻናት ለህክምና ወደጤና ድርጅት በሚሄዱበት ወቅት ደግሞ የባህርይን ሁኔታ ለመረዳት የሚያስችሉ ለዚህ ጥናት የመጀመሪያ ደረጃ የተጠቀምንባቸው አይነት ቅላላና ጊዜ የማይፈጅ ጥያቄዎችን መጠየቅ በሁሉም የጤና ድርጅቶች ተግባራዊ እንዲሆን ይመክራል:: በአዲስ አበባና በቡታጃራ እንደተደረጉት መሰል ጥናቶች በሌሎች የሃገሪቱ አካባቢዎችም መሰራትና ሃገራዊው የህጻናት የባህርይ ችግር ያለበት ሁኔታ መታወቅ ይኖርበታል:: ይህም አስፈላጊውን የመከላከልና የማዳን ፕሮግራም በሚያስፈልገው መጠን ለማዘጋጀት ወሳኝ ነው::

ዶር ምኒልክ ደስታ

የምርምሩ ህላፊ::