PSYCHOSOCIAL FUNCTIONING AMONG CHILDREN WITH SICKLE CELL DISEASE AGED 6 - 13 YEARS AT MUHIMBILI NATIONAL HOSPITAL DAR - ES - SALAAM, TANZANIA.

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By

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A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Medicine (Pediatrics and Child Health) of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled **Psychosocial functioning Among children with sickle cell disease aged 6-13 years at Muhimbili National Hospital, Dar-es-Salaam** in (Partial) the fulfillment of the requirements for the degree of Masters of Medicine (Paediatrics and Child Health) of the Muhimbili University of Health and Allied science (MUHAS).

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DECLARATION AND COPYRIGHT

I **Dr. Mwajuma A. Ahmada** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for similar or any other degree award.

Signature……..... Date……

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Lastly but not least, I am grateful to my mother Maryam Said, my father Ali Ahmada, my husband Ahmed Rajab and my daughters Maryam and Naima, my sisters Salama, Saada and Saniya for their encouragement and support during preparation of this dissertation.

DEDICATION

This dissertation is dedicated to my family for laying an excellent foundation right from childhood for me to become a doctor and to my husband for his tireless support.

ABSTRACT

Background: There has been significant improvement in the care and treatment of children with sickle cell disease (SCD) that has increased survival and ultimately decreasing morbidity and mortality. The quality of life of those that survive into adulthood is often determined by the complications of SCD, and the psychosocial problems that these children develop. Several studies conducted in North America and United Kingdom showed that children with SCD have significant problems in these domains. However, information regarding psychosocial functioning among children in sub-Saharan Africa is limited.

Broad Objective: To assess psychosocial functioning among children with SCD compared to children in comparison group aged 6-13 years at Muhimbili National Hospital.

Methodology: This was a hospital based, cross sectional, analytical study that involved a comparison of conveniently selected children aged 6 to 13 years with SCD and group of children who have no SCD at the Sickle cell clinic at MNH, Dar es Salaam.

Data analysis was done using SPSS version19. Descriptive frequency statistics was used to characterize participants in the sample as a whole. Patients' characteristics were compared using chi square test for categorical variables. Logistic regression model was used to assess the association of risk factors and the overall psychosocial abnormality in children with SCD. Level of statistical significant was taken as 0.05.

Expected value of findings: the findings of this study will have the potential of providing data that can be used to plan evidence based interventions to improve the overall management of children with SCD in Tanzania.

Results: A total of 430 children aged 6-13 years were recruited, 215 being patients with SCD and 215 children with no SCD. A median age was 10 years. Females were 53.5% compared to males 46.5%.

Overall prevalence of abnormal Psychosocial functioning was high among children with SCD (57.7%) compared to those children with no SCD (42.3%) with p-value of <0.01. Similarly a highly statistical significant difference was observed in abnormal emotional prevalence 56.2% in children with SCD compared to 43.8% in children with no SCD. Abnormal school functioning in children with SCD (59%) compared to children without SCD (41%) with p-value of < 0.01.

Abnormal social functioning was also higher (60.7%) in children with SCD compared to 39.3% in those children with no SCD and the difference was highly statistically significant (p-value < 0.01)

Having three or more episodes of painful crises per year is more likely to affect the abnormal overall Psychosocial prevalence in children with SCD with p-value of < 0.01 and 95%CI :(0.10-0.75) in bivariate analysis and p-value of < 0.01 and 95%CI (0.08-0.64) in multivariate analysis.

Conclusion:

Children with SCD have shown slightly high psychosocial impairment as compared to children without SCD. And having three or more episodes of painful crises per year is associated risk factor to psychosocial impairment in children with SCD.

Recommendations:

Children with three or more painful episodes per year should have psychosocial assessment and those who will be found to have impaired psychosocial functioning should be given appropriate care.

LIST OF ABBREVIATIONS

Hb S	Hemoglobin S
HBSC	Health Behavior in School aged Children
HPLC	High Performance Liquid Chromatography
SCD	Sickle Cell Disease
SD	Standard Deviation
SSA	Sub-saharan Africa
PYO	Person Years of Observation
IQR	Inter-Quartile Range
MUHAS	Muhimbili University of Health and Allied science
WHO	World Health Organization

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1.0. INTRODUCTION AND LITERATURE REVIEW

1.1. Overview of chronic diseases world wide

Chronic illnesses in children are a global problem. A national survey.[1] held in United States in 2002- 2003 found that the leading chronic health conditions causing activity limitation in children differed by age and sex, included speech problems, asthma, mental retardation, learning disability, and attention deficit/hyperactivity disorder.

Illnesses such as sickle cell disease (SCD) and certain cancers that manifest in childhood are becoming more important, since the advances in treatment, resulting in children living longer.

Africa's chronic disease burden is attributed to multifaceted factors including increased life expectancy, changing lifestyle practices, poverty, urbanization and globalization.[2] Rising morbidity and mortality from chronic diseases co-exist with an even greater burden of infectious disease, which still accounts for at least 69% of deaths on the continent.[3]

Many African health systems are under-funded, under-resourced and struggle to cope with the cumulative burden of infectious and chronic diseases. An estimated 80% of regional health budgets have been allocated to communicable disease for the last decade.[4] Ministries of Health acknowledge the presence and impact of a chronic disease burden, but few countries have plans or policies for chronic diseases.[5]

Historically, formal healthcare in Africa has developed in response to acute communicable diseases and diseases of environmental degradation and pollution
Therefore most health systems prioritize training and expertise in communicable disease and underestimate the importance of human and material capacity for chronic disease care.[6]

In the United Republic of Tanzania, chronic diseases are projected to account for 20% of all deaths. WHO projects that over the next ten years more than one million people will die from chronic diseases in Tanzania. These diseases create large adverse and underappreciated economic effects on families, communities and countries. Sickle Cell Disease (SCD) is one of the major chronic diseases in Tanzania, and there is a need to assess the impact of this disease on the children who are surviving.[7]

Overview of sickle cell disease:

Epidemiology

Sickle Cell Disease and Thalassaemia are classified as the two main haemoglobinpathies, and in recent years have been acknowledged to have a global impact by the WHO.

SCD comprises a group of inherited red blood cell conditions that result from the synthesis of variant or mutant haemoglobins. It is estimated that 200,000 to 300,000 babies are born with SCD in Africa and approximately 100,000 are born with this condition in Middle East and India.[8]

SCD is predominant among people from African, Asian, Arabian and Mediterranean countries; nonetheless it is a global health problem because of population migration.SCD results in early childhood death if left undetected, and its effect on the burden of health care is being recognised as a global issue in terms of chronic disease.[9]

Inheritance of a single sickle haemoglobin (HbS) gene results in a sickle cell carrier state, while the inheritance of the HbS gene from both parents, or HbS with another variant haemoglobin gene (eg HbC, Hbβ-thalassaemia) results in symptomatic SCD. Generally, the prevalence of healthy carriers (sickle cell trait) ranges between 10% and 40% across equatorial Africa and decreases to between 1% and 2% in Northern Africa and less than 1% in Southern Africa. In West African countries such as Ghana and Nigeria, the frequency of carriers is 15% to 30% while in East African countries such as Uganda and Tanzania it shows wide variations of up to 45% in some areas.[9]

Sickle cell disease in Tanzania

The estimated birth prevalence of children with SCD in Tanzania is 7 per 1000 children. It is estimated that more than 50% of the children with SCD die before the age of five and over 5% of the infant mortality in Tanzania may be attributable to SCD. The frequency of sickle heterozygous carrier state in Tanzania is 13 % with annual estimate births of 8,000 homozygous SS children.[10]

A study done in Tanzania by Julie Makani et al, showed that overall mortality from SCD was 1.9 per 100 PYO with highest rate occurring in children below five years of age 7.3 per 100 PYO.[10]

Definition and pattern of inheritance

Hemoglobin S (Hb S) is a result of a single base pair change, thymine for adenine, at the 6th codon of the Beta-globin gene. This change encodes valine instead of glutamine in the 6th position in the Beta-globin molecule. SCA, homozygous Hb S, occurs when both Beta-globin genes have the sickle cell mutation.[11]

Due to advances in clinical recognition, newborn screening, and therapeutic and preventative interventions, the mortality rates of children with SCD have decreased by approximately 53% over the past four decades. [12]

Given that children with SCD are living longer, the psychosocial impact of the disease on the patient and their families becomes a more significant issue. Specifically, both children with SCD and their caregivers are at risk for significant psychosocial maladjustment.[13]

Clinical Features and Medical Management of SCD

The abnormal hemoglobin causes cells to become “sickle shaped” resulting in irregular blood flow to the limbs and organs.[11]

The clinical complications include anaemia, infection, and the consequences of blood vessel blockage (vaso-occlusion). The latter deprives tissues of oxygen and is suggested as the cause of the acute painful episodes, the hallmark of SCD, and other clinical syndromes such as stroke, chest complications, priapism, leg ulceration, dactylitis or hand-foot syndrome and chronic organ failure.[14] Other complications are the result of haemolysis such as anaemia, splenic sequestration and gallstones. Delayed growth and puberty may also occur

Antibiotic prophylaxis prevents infections especially in children.[15], hence improving survival.

Analgesic pain control is usually in progressive stages and requires a variety of medications ranging from paracetamol for mild pain to morphine for severe pain. Blood transfusions may prevent stroke and other complications. Hydroxyurea has also been found to be very effective in reducing the 'sickling' process and consequently the frequency of pain and hospitalizations experienced by patients.[16]

Bone marrow transplantation is a possible cure; however among other criteria, this requires a matched donor, and unfortunately is not feasible for all affected children.[17]

Definition of terms

Child development refers to the biological and psychological and emotional changes that occur in human beings between birth and the end of adolescence. These changes occur as the individual progresses from dependency to increasing autonomy. Age-related development periods and defined intervals are: newborn (ages 0–4 weeks); infant (ages 4 weeks – 1 year); toddler (ages 1–3 years); preschooler (ages 4–6years); school-aged child (ages 6–13 years); adolescent (ages 13–20).[18]

Psychosocial: relating to the inter relation of social factors and individual thoughts and behavior.[19]

Behavior: the way in which a person responds to a situation or stimulus.[19]

Concrete thinking: Is the ability to think about objects, principles, and ideas that are physically present. Concrete ideas are usually visible and objective.[20]

Abstract thinking: is the ability to process ideas that involve complex visual or language-based ideas that are not easily associated with concrete ideas. Abstract ideas are often invisible, complex, and subjective.[20]

Piaget's Cognitive Stages[21]

Cognition refers to the way in which children gain knowledge through perception, memory, and thought processing. Piaget identified distinctive cognitive stages:

l. Sensorimotor stage [0-2 Years] - in the first two years of life, a child's intellectual development is largely nonverbal.

2. Preoperational stage [2-7 years] -children are developing ability to think symbolically and to use language, but their thinking is still very intuitive and very concrete.

3. Concrete Operational Stage [7-11 Years] - increasingly logical and inductive learning--can do mental as well as physical manipulations.

4. Formal operation Stage [11 years and up] - abstract thinking and deductive reasoning which is not necessarily tied to experience.

Psychosocial development is the development of the personality and the acquisition of social attitudes and skills from infancy through maturity.[22]
It has dimensions such as social, emotional and school functioning.
Social interactions are the acts, actions, or practices of two or more people who are mutually oriented towards each other.
Emotion is a complex psycho- physiological experience of an individual's state of mind as interacting with biochemical (internal) and environmental (external) influences. In humans, emotion fundamentally involves "physiological arousal, expressive behaviors, and conscious experience."[23] Emotion is associated with mood, temperament, personality, disposition, and motivation.

School function refers to a student's ability to perform important functional activities that support or enable participation in the academic and related social aspects of an educational program.[23]

Impact of SCD on psychosocial functioning

Children with SCD can experience psychosocial function difficulties as consequences of long standing chronic disease. There are many studies that were done in Europe and North America and have shown the results below:

A study done in Atlanta by Barrett et al indicated that patients with SCD have significant psychological distress in performing daily activities, increased fear and anxiety, lack of assertiveness in social relationships and suggest that depression may be a common problem among patients with SCD.[24]

A study done in United States of America by Moskowits et al showed the perceived care burden of caregivers of children with SCD may be related to the unpredictable nature of the crisis care they provide and additional attention is warranted to developing adequate resources for caregivers of children with SCD to mitigate the stress of unexpected crises.[25]

A study in United Kingdom by Hurtig A.L, White LS investigated on the degree to which the stress of chronic illness impacted on adjustment in children and adolescents with sickle cell disease. Results showed that there were problems in a range of adjustment variables, most significantly in the areas of behavior problems and social adjustment.[26]

A study done in London UK by Anie KA and Steptoe A on relations between pain, mood, physical activity, and medication use showed that patients who use opioids more frequently for sickle cell pain show more disruption of their lives, with reduced activity levels and more pessimistic mood.[27]

A study done in New York by Alao et al on Psychopathology in SCD showed the depressive symptoms have been associated with severity of disease in SCD and the disease process affects family members as well.

The study concluded that comprehensive management of patients should include adequate social support, appropriate education about the illness and improved communication among health care providers. And careful evaluation of children with SCD is necessary to assess the depressive symptoms.[28]

A study done in Atlanta by Kaslow et al on the efficacy of a family psychoeducational intervention for youth with sickle cell disease (SCD) and their parents or primary caregivers, they examined on disease knowledge, psychological adjustment, family and social functioning, and social support. Findings showed that the family intervention yielded more improvements in child and primary caregiver disease knowledge than did treatment as usual.[29]

A study done in Columbia by Jaffrey Schatz showed children with Sickle cell disease had high rates of academic attainment problems relative to their peers.[30]

A study done in United States by Eaton et al on hospitalizations for painful episodes: association with school absenteeism and academic performance in children and adolescents with sickle cell anemia, the results showed lack of difference in academic performance between the two groups suggesting that there may be factors other than school absenteeism that affect academic achievement, which require further investigation.[31]

1.2. PROBLEM STATEMENT

There has been significant improvement in the care and treatment of children with SCD. This resulted in increasing survival of these children. The decreasing morbidity and mortality due to SCD has transformed SCD into a chronic illness.

The primary objective of therapeutic interventions is to maximize function and well-being in the everyday life of children with SCD. In order to do so it is important to tackle the psychosocial impact of this disease on these children.

Currently there are few studies that have been done to determine the prevalence of psychosocial functioning in these children and this has prompted the need to carry out this study so that we can be able to provide good quality of care for these children and ultimately understand their experience in integrating SCD as a chronic disease into their lives and the psychosocial impact of the disease and its treatment.

Moreover this study was able to determine the prevalence of abnormal psychosocial and associated risk factors: age, sex and medical characteristics (episodes of painful crises, number of admissions, malaria and number of blood transfusion in previous year) among children with SCD.

1.3. RATIONALE OF THE STUDY

Knowledge of SCD and its treatment has also improved and children with SCD are nowadays growing up to adult hood, making SCD a chronic disease. As a result, there is a challenge of optimizing the health of these children.

Knowing that the prevalence of SCD is high in Tanzania, the affected children suffer a lot of complications including psychosocial impairment.

This study was conducted in the absence of information of magnitude of psychosocial functioning in children with SCD and their comparison group of children without SCD. The study has shown that the prevalence of psychosocial abnormality among children with SCD is high; this will raise awareness to the clinicians attending these children as well as the government and stakeholders.

The study will help in improving the overall management of children with SCD as well as designing and implementing specific interventions as it has been shown that the psychosocial abnormality in these children is high.

Research Question

What is the prevalence and risk factors for psychosocial functioning in children with SCD compared to children without SCD in Tanzania?

1.4. OBJECTIVES OF THE STUDY

1.4.1. Broad objective

To assess the psychosocial functioning among children with SCD compared to children without SCD in comparison group aged 6-13 years attending sickle cell clinic at Muhimbili National Hospital.

1.4.2 Specific objectives

1. To determine the prevalence of overall abnormal psychosocial functioning in children with SCD compared to children without SCD in comparison group as measured by the WHO Health Behaviour in School-Aged Children tool.

2. To determine the prevalence of social, school and emotional functioning among children with SCD and children without SCD in comparison group.

3. To determine the risk factors (age, sex, and clinical characteristics) for impaired psychosocial functioning in children with SCD.

2.0. METHODOLOGY

2.1.1 Study Design

This was a hospital based, cross sectional, comparative, analytical study to assess the psychosocial functioning among children with SCD and their comparisons aged 6-13 years in MNH.

2.1.2 Study population

Children with sickle cell disease aged between 6-13 years were recruited in this study, children who did not have SCD after screening at MNH aged between 6-13 years with no SCD were also recruited as the comparison group.

2.1.3 Sample size

Sample size for this study was determined using a proportion of 50% because of scarcity of epidemiological data on psychosocial functioning of children with sickle cell disease. Proportion (or percentage) of the sample that have (or expected to develop) the condition of interest. Since the latter was uncertain in this study, a value of 50% was used. The sample size for unmatched case control studies was calculated as follows:

For 95% Significance, Za=1.96

For 80% Power, we are certain of estimating a relative risk R that is at least 2 fold in magnitude, and Zß=.84

Taking the rate of exposure in the cases is equal to $p0 = 0.5$

The exposure rate, *p1* among controls in the comparison group would then be equal to:

$$\boldsymbol{p1 = \frac{p0 \text{x } R}{1 + p0\ (R - 1)}}$$

$$p1 = \frac{0.5\text{x } 2}{1 + 0.5\ (2 - 1)}$$

$$p_1 = 0.67$$

Then,

$$n = \frac{[\mathbf{Za}\sqrt{\mathbf{2}\boldsymbol{p}\ \mathbf{q}} + \mathbf{Z\beta}\sqrt{\boldsymbol{p}\mathbf{1}\ \mathbf{q1} + \boldsymbol{p}\mathbf{0q0}}]}{(\ \boldsymbol{p}\mathbf{1}\ -\ \boldsymbol{p}\mathbf{0})\mathbf{2}}^{\ 2}$$

Where:

p= (*p1 + p0)* /2

p= (0.67+0.5) /2
p= 0.58

q= 1- *p*

q= 1-0.58
q= 0.42

q*1*= 1- *p1*

q*1*=1-0.67
q*1*=0.33

q*0*= 1- *p0*

q*0* =1-0.5
q*0* =0.5

n= [1.96√2x0.58x0.42+0.84√0.67x0.33+0.5x0.5]2 / (0.67-0.5)2

n= [1.37+0.69]2/0.0289

n=147

Adjusting for missing data and non-responders then the sample size was increased by 10%, hence the minimum sample size for each group was 162 children. In this study a total of 215 children were recruited in each group.

2.1.4 Sampling method.

Children with SCD and children in comparison group aged six to thirteen years were conveniently selected based on the inclusion and exclusion criteria. The age range was chosen due to availability of the tool for assessment of psychosocial functioning.

2.1.5 Study area

This study was conducted at MNH Sickle cell clinic. About 55-70 patients with SCD attend the clinic on Wednesday and Thursday every week. About seventeen of them are aged between 6-13 years.

The comparison groups were children without SCD obtained from the data base of those children who have been previously screened for SCD and have (Hb AA) by HPLC and Hb electrophoresis. Among them 2% had a family member with SCD (siblings) and 98% were referred from other health facilities with illness that was suspected as would have SCD. These children have their basic information including their parents' telephone contacts, family identification numbers and dates of birth which are stored in data base at sickle cell and hematology department MNH.

2.1.6 Study duration

This study was conducted for a total period of 16 months from December 2011 to March 2013.This duration included time for proposal development, pre testing of the questionnaire, data collection, entry, analysis and dissertation write up.

2.1.7 Recruitment of study subjects

Children with SCD who were planned for the clinic visit, registered to a clinic nurse after their arrival to the clinic. After obtaining a registered list of the day, those who meet the criteria were listed and recruited consecutively in the study from the first patient in the list to the last.

The comparison group of children from the data base was obtained from the Sickle cell team supervisor and data manager. Recruitment to the study was done by convenient sampling. Consecutively their parents were contacted by their telephone numbers and those who agreed to participate in the study were recruited on Wednesdays and Thursdays.

The translated Swahili questionnaire was administered by the principal researcher for the child to respond.

2.1.8 Study variables

The dependent variable will be the proportions of the total scores of the HBSC inventory and independent variables will be age, sex and clinical characteristics.

2.1.9 Inclusion criteria

Children who were eligible for this study were to fulfill the following criteria:

- Children with confirmed SCD by Hb electrophoresis, attending at MNH SCD Clinic.
- Children between the age of six and thirteen years old.
- Comparison children from the data base should be residents of Dar-es –Salaam, with operating telephone numbers, who agreed to participate in the study and showed up to MNH on Wednesdays and Thursdays for recruitment to the study.
- Children who assented to participate in the study.
- Parents/caretaker who granted a written informed consent to participate in the study.

2.1.10 Exclusion criteria

- Those with suspected co morbid chronic diseases from the history and physical examination such as HIV/TB, asthma, juvenile rheumatoid arthritis were not included as these diseases might interfere with the assessment of psychosocial functioning.

2.1.11 Informed consent process and Disclosure

- **Informed consent**

Children who were eligible for this study, their parents/caretaker voluntarily accepted their children to participate in the study gave a written informed consent, after receiving thorough information regarding the aim of the study, its benefits and risks.

- **Assent**

An assent was sought from children before participating in the study.

2.1.12 Research instruments

Health Behavior of School aged Children Inventory tool was the instrument of obtaining data on psychosocial functioning for these children.

Health Behavior of School aged Children Inventory questionnaire

It is one of the most widely used tools to assess psychosocial functioning in children, the advantages of which include availability and age specific version and was subjected to changes according to Tanzania cultural background as suggested by WHO. For changes see the appendix three and four. [32]

Scaling and Scoring of HBSC Inventory

The HBSC inventory is composed of 57 modified items comprising 3 dimensions on emotional, social and school functioning and other items on safety and hygiene. Items on social, emotional and school functioning were used to assess psychosocial functioning. The rule of three was used in scoring into those with normal and impaired psychosocial functioning.[33] Selected individual questions involved in analysis depending on responses, were scored as one or two being poor score and better scores respectively. This was done separately for questions on academic, social and emotional functioning. The total scores were transformed on a scale and using a rule of three, children scoring below two-thirds of the total were regarded as having impaired psychosocial functioning and scoring above two-thirds of the total were considered as normal. The overall psychosocial prevalence was considered impaired if the child scored below 21 of the total scores (32) among the three dimensions.

2.1.13 Pretesting of the tool in our setting

Prior to the main study, pretesting of the research instrument was done at Muhimbili National hospital sickle cell clinic. It involved 10% of the estimated sample size and some unclear questions in the instrument were reworked and some questions were modified as seen in appendix three and four in question number 4 and 9.

2.1.14 Data analysis

Data obtained from the tools were double entered in SPSS for windows version 19.

The analysis was done as follows.

Descriptive frequency statistics was used to characterize participants in the sample as a whole. These patients' characteristics were compared using chi square test for categorical variables. Logistic regression model was used to assess the association of risk factors and the overall impaired prevalence of psychosocial functioning. Level of significance was taken at p value less than or equal to 0.05 in two tail and 95% confidence interval was used in analysis.

2.1.15 Ethical consideration and clearance

Ethical clearance to conduct the study was sought and granted by Muhimbili University of Health and Allied Sciences (MUHAS) Ethical Board Committee.

The study did not interfere with routine care of these children in the clinic nor involved in exploring their privacy.

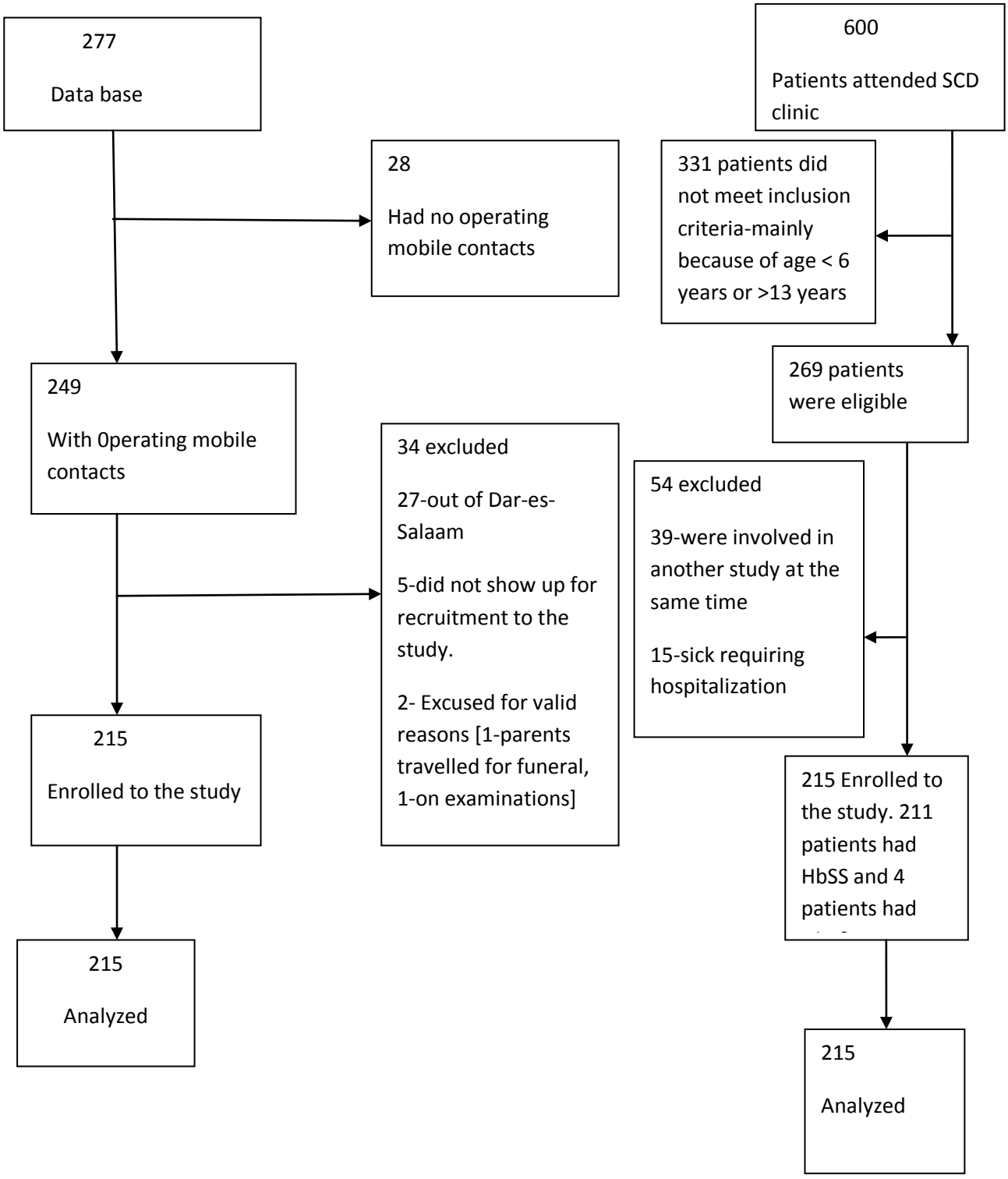
Assent for study participation was obtained from children. Written informed consent was obtained from each parent/guardian of the children after thoroughly explanation of the purpose of the study and its future implications in the field of health.

Participants were given an option of whether to participate in the study or not. The issue of confidentiality was adhered and all participants were informed that any information provided will be confidential.

Moreover those children whom their psychosocial aspect of life was found to be impaired were contacted and referred to the appropriate specialties and standard of care was provided.

3.0. RESULTS

PARTICIPANTS FLOW CHART



3.1. Background characteristics:

Table1 below shows the background characteristics of children recruited into the study. A total of 430 children aged 6-13 years were recruited out of which 215 had SCD and 215 had no SCD. Out of all participants (53.5%) were females and median age was 10 years. Both groups had more females than males but the difference was not statistically significant. Significant difference was noted between and within the groups on education status in both SCD and comparison group.

Table 1: Background characteristics of the study population

	Demographic characteristics		
Age in years	SCD group	Comparison group	p-value
6-10	122 (51.0%)	117 (49.0%)	0.63
11-13	93 (48.7%)	98 (51.3%)	
Median age (IQR)	10 (8-12)	10 (8-12)	
Gender			
Males	96 (48.0%)	104 (52.0%)	0.44
Females	119 (51.7%)	111 (48.3%)	
Education status			
Not enrolled for education	16 (80.0%)	4 (20.0%)	< 0.01
Kindergarten	38 (32.8%)	78 (67.2%)	
Primary	161 (54.8%)	133 (45.2%)	
Total	215	215	

3.1.2 Psychosocial functioning of study participants.

Table 2 below; describes the psychosocial functioning of study participants. Children with SCD had significantly higher proportion of children with overall impaired psychosocial functioning (57.7%) as compared to children in comparison group (42.3%) $p < 0.01$

Similarly a significant difference was seen in impaired emotional proportion 56.2% compared to 43.8% in comparison group. Impaired school functioning was significantly higher in children with SCD (59%) than to children in comparison group (41%) with p-value <0.01. Impaired social functioning was also higher (60.7%) in children with SCD compared to 39.3% in comparison group and the difference was statistically significant with p-value of < 0.01.

Table 2: The prevalence of Psychosocial functioning among children with sickle cell disease and comparison group at Muhimbili National Hospital.

Characteristics	Sickle cell disease status		
Overall prevalence of psychosocial profile	SCD group	Comparison group	p-value
Normal	27 (26.0%)	77 (74.0%)	< 0.01
Impaired	188 (57.7%)	138 (42.3%)	
Prevalence of School functioning			
Normal	55 (33.1%)	111 (66.9%)	< 0.01
Impaired	144 (59.0%)	100 (41.0%)	
Prevalence of Emotional functioning			
Normal	28 (28.9%)	69 (71.1%)	< 0.01
Impaired	187 (56.2%)	146 (43.8%)	
Prevalence of Social functioning			
Normal	10 (10.9%)	82 (89.1%)	< 0.01
Impaired	205 (60.7%)	133 (39.3%)	

3.1.3. School functioning and SCD status among the study population.

Table 3 shows; there was a significant difference in attaining poor school performance between sickle cell disease patients (70%) compared to children in comparison group (30%) with p-value of < 0.01. Similarly a significant difference was noted on self reporting tiredness on going to school in the morning, strict treatment by teachers at school, being bullied by other students and pressured by school work. 51.4% of children with SCD did not like the school compared to 48.6% of children in comparison group but this was not statistically significant (p-value 0.59).

Table 3: School functioning among children with sickle cell disease and comparison group at Muhimbili National Hospital.

Characteristics	Sickle cell disease status		
Perceived School Performance	SCD group	Comparison group	p-value
Above average (good)	101 (37.4%)	169 (62.6%)	< 0.01
Average and Below (poor)	98 (70.0%)	42 (30.0%)	
Liking school			
Yes	163 (47.9%)	117 (52.1%)	0.59
No	36 (51.4%)	34 (48.6%)	
Tiredness on going to school			
No	145 (41.6%)	204 (58.4%)	< 0.01
Yes	54 (88.5%)	7 (11.5%)	
Strict treatment by teachers			
Disagree	109 (57.4%)	81 (42.6%)	< 0.01
Agree	90 (40.9%)	130 (59.1%)	
Bullied by students			
No	76 (31.3%)	167 (68.7%)	<0.01
Yes	123 (%73.7)	44 (26.3%)	
Pressured by school work			
No	101 (55.8%)	80 (44.2%)	<0.01
Yes	98 (42.8%)	131 (57.2%)	

3.1.4 Emotional functioning and SCD status among the study population.

There was a significant difference on Perception in one's health status between sickle cell disease patients and the comparison group. More children with SCD (81.1%) reported being not healthy compared to children in comparison group with p-value of < 0.01. Similarly a significant difference was noted in self reporting on not feeling happy about present life (84%) compared to (16%) in comparison group with p-value of <0.01. Reporting on confidence in one's self, the need for body image changes and feeling helpless were statistically significant different between the two groups as shown in Table 4 below.

Table 4: Emotional functioning among children with sickle cell disease and comparison group at Muhimbili National Hospital.

Characteristics	Sickle cell disease status		
Self rated health	SCD group	Comparison group	p-value
Healthy	95 (33.7%)	187 (66.3%)	< 0.01
Not healthy	120 (81.1%)	28 (18.9%)	
Life satisfaction			
Happy	57 (23.6%)	185 (76.4%)	< 0.01
Not happy	158 (84.0%)	30 (16.0%)	
Body image/changes			
No	98 (33.6%)	194 (66.4%)	< 0.01
Yes	117 (84.8%)	21 (15.2%)	
Helplessness			
Rarely/never	81 (36.3%)	142 (63.7%)	< 0.01
Always/ often	134 (64.7%)	73 (35.3%)	
Confidence on one's self			
Always/ often	90 (44.1%)	114 (55.9%)	0.02
Rarely/never	125 (55.3%)	101 (44.7%)	
Total	215	215	

3.1.5 Social functioning and SCD status among the study population.

There was a significant difference on how easy is to communicate with father and mother, having close friendships, time spent with friends per week and making new friends between children with sickle cell disease and those in comparison group as shown in Table 5 below.

Table 5: Social functioning among children with sickle cell disease and comparison group at Muhimbili National Hospital.

Characteristics	Sickle cell disease status		
Communication with father	Yes (%)	No (%)	p-value
Easy	76 (66.1%)	39 (33.91%)	<0.01
Difficult	139 (44.1%)	176 (55.9%)	
Communication with mother			
Easy	62 (31.8%)	133 (68.2%)	<0.01
Difficult	153 (65.1%)	82 (34.9%)	
Close friendships			
Yes	107 (37.2%)	181 (62.8%)	<0.01
None	108 (76.1%)	34 (23.9%)	
Making new friends			
Easy	121 (38.4%)	194 (61.6%)	< 0.01
Difficult	94 (81.7%)	21 (18.3%)	
Time spent with friends per week			
2-5 days	65 (32.8%)	133 (67.2%)	< 0.01
No friends / once or less.	150 (64.7%)	82 (35.3%)	
Total	215	215	

3.1.6 The risk factors associated with overall impaired psychosocial functioning in children with SCD.

Table 6 below shows, in bivariate and multivariate logistic regression, having three or more episodes of painful crises per year is more likely to affect the overall impaired Psychosocial prevalence in children with SCD with Odds Ratio 0.28, p-value of < 0.01 and 95%CI:(0.10-0.75) and Odds Ratio 0.23, p-value of < 0.01 and 95%CI:(0.08-0.64) respectively. Age of children, number of admissions, numbers of blood transfusion, sex and malaria did not show effect on abnormal overall Psychosocial prevalence as these predictors were not statistically significant.

Table 6: Predictors of overall impaired Psychosocial Prevalence in children with SCD.

Variable	p-value	Unadjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)
Age				
6-10		1		
11-13	0.62	1.22 (0.54-2.75)		
Sex				
Females		1		
Male	0.66	0.83 (0.37-1.88)		
Episodes of painful crises in the previous year				
None		1		1
< 3	0.13	0.42 (0.13-1.30)	0.09	0.37 (0.12-1.19)
≥ 3	< 0.01	0.28 (0.10-0.75)	< 0.01	0.23 (0.08-0.64)
No. of blood transfusion				
None		1		
< 3	0.91	0.96 (0.48-1.91)		
≥ 3	0.28	0.43 (0.09-1.95)		
No. of admission				
None		1		1
<3	0.62	1.24 (0.52-2.99)	0.37	1.23 (0.51-2.99)
≥ 3	0.18	0.25 (0.03-1.93)	0.15	0.22 (0.03-1.76)
Malaria				
None		1		1
< 3	0.18	2.06 (0.71-5.96)	0.182	2.07 (0.71-5.99)
≥ 3	0.09	2.89 (0.85-9.84)	0.11	2.78 (0.80-9.61)

4.1. DISCUSSION

The study was conducted in MNH to assess the psychosocial functioning of children with SCD compared to children without SCD at MNH Sickle cell clinic in Dar-es-salaam.

Prevalence of Psychosocial functioning

The overall prevalence of impaired psychosocial functioning was higher in children with SCD (57.7%) compared to children in comparison group (42.3%). This was also noted in individual dimensions contributing to psychosocial prevalence.

Impaired school functioning in children with SCD is higher 59% than 41% in comparison group. This could be explained by the fact that children with SCD suffer from repeated episodes of painful crises necessitating either hospitalization or absenteeism and increased number of missed school sessions in a term which might lead to inability loss to follow the lessons properly.

Higher number of children with SCD 56% showed impaired emotional functioning compared to 38.3% in comparison group. This could be explained by majority of children with SCD reported to be bullied by their peers. Apart from SCD, there are other factors that may contribute to emotional impairment such as recent loss of the parent, separation of parents, family conflicts and other traumatic events which were not assessed in this study that might have caused the proportion of emotional impairment being higher in children with SCD as well as to children in comparison group.

More children with SCD (60.7%) had impaired social functioning compared to children in comparison group (39.3%); this can be due to difficulties faced by children with SCD in maintaining close friendships because of frequent illnesses but also less time spent with friends and difficulties in making new friends as most of the times they are not available to play with peers.

School functioning among the study population

The proportion of getting poor results in school performance among the groups was higher in children with SCD (70%) compared with children in comparison group (30%).

This is a similar finding to the study done by Jeffrey Schatz[30] poor school performance was more frequent in children with SCD (31%) compared to matched peers (14%), showing that SCD could be one among the causes of poor school performance in these children.

There was no much difference in liking the school between children with SCD (51.4%) and without SCD (48.6%). Children with SCD have reported on being bullied by other students because of their physical appearance which could be contributing to them not liking the school, while the results in a comparison group would be by chance as other factors such as school environment and numbers of students per class were not assessed in this study.

Tiredness on going to school seen more in children with SCD (88.5%) compared to children in comparison group (11.5%) This could be explained by recurrent anaemia and painful crises as a part of complication of SCD.

Strict treatment by teachers was observed in majority of children in comparison group (59.1%) compared to children with SCD (40.9%). This could be explained by protective effect offered by school regulations, as children with SCD are given red tags to put into their school uniforms so that they are handled with care including avoiding corporal punishment.

Reporting on being bullied by other students was more in children without SCD (73.7%) compared to 26.3% in comparison group. The difference could be due to majority of children with SCD would mention valid reasons of why they were bullied at school including thin looking, yellow eyes, those with massive splenomegally being bullied as they were pregnant.

Pressured by school work was more among children in comparison group (57.2%) compared to children with SCD (42.8%) which could be explained by more extra school work such as cleaning, gardening that contributes to tiredness and hence causing more pressure by school work. In children with SCD, recurrent anaemia causing weakness and easy fatiguability as among the symptoms of the disease contributing to being pressured by school work.

Emotional functioning among the study population

More children with SCD perceived themselves as being not healthy (81.1%) compared to children in comparison group (18.9%) which could be explained by complications of SCD, that these children are suffering from repeated painful crises, infections and hospitalizations.

As seen in life satisfaction, more children with SCD reported being not happy about the present life (84%) compared to (16%) among children in comparison group. This could also be explained by complications of SCD such as repeated painful crises, infections and hospitalizations.

Children with SCD 84.8% reported the need in body changes including being free of SCD if possible compared to 15.2% in comparison group.

Majority of children with SCD reported to be often or always helpless (64.7%) compared to children in comparison group (35.3%).

Confidence on one's self in children with SCD was higher (55.3%) compared to children without SCD (44.7%). This could be explained as a method of coping, building as a protective effect on helplessness.

Social functioning among the study population

Easy communication with the father was more frequent in children with SCD (66.1%) compared to children in comparison group (33.9%). This could be explained as part of care to sick children; fathers are trying to cope and showing more care and concerns with the condition of these children or it could be by chance.

While easy in communication to mothers being more frequent in children without SCD (68.2%) compared to those with SCD (31.8%), this statistical difference could be by chance.

A difficulty in close friendships as measured by number of close friends was more observed in children with SCD (76.1%) compared to children in comparison group (23.9%). This is comparable to the study done by Barrett et al [24] which showed that patients with SCD have significant psychological distress in social relationships. This could be due to repeated episodes of illness and hospitalizations.

Making new friends was reported to be more difficult in children with SCD (81.7%) compared to comparison group (18.3%) The difference could be explained by these children with SCD being afraid of either being bullied or denied of friendship and regarded as at any time they could be sick.

More children with SCD reported to have no friends or spent once or less than once evening with friends (64.7%) compared to 43.3 % in children in comparison group, Which could be explained by the nature of illness necessitating staying at homes most of the time, being limited in their playing that might precipitate painful crises which is physiologically true if proper rehydration is not ensured after prolonged sweating.

Overall impaired psychosocial functioning and associated risk factors in children with SCD.

Having more than three episodes of painful crises per year were shown to be associated with impaired Psychosocial Prevalence with Odds Ratio 0.28, p-value of < 0.01 and 95% CI: (0.10-0.75) in bivariate analysis and Odds Ratio 0.23, p-value of < 0.01 and 95% CI (0.08-0.64) in multivariate analysis. In a study done by Eaton et al [31]on hospitalizations for painful episodes: association with school absenteeism and academic performance in children and adolescents with SCD, the results showed lack of difference in academic performance between the two groups suggesting that there may be factors other than school absenteeism that affect academic achievement, which require further investigation.

However, this study showed that there was a significant association between painful crises and overall psychosocial impairment. This may be due to the fact that this study considered other factors such as emotional, social and school functioning that can have influence on overall psychosocial functioning.

From these results I would wish to see children with SCD who have started showing increased frequency of painful crises of three or more per year should be evaluated Psychologists or Psychiatrists and should be enrolled for yearly visits, And for possible initiation of Hydroxyurea, the drug which has been shown to be effective in reducing the episodes of painful crises and hence overall well being of SCD patients.

Age, sex, number of admissions, number of blood transfusion and malaria were not associated with an overall psychosocial impairment among children with SCD. WHO report also showed age and sex did not have an effect across 39 countries involved on the survey on individual variables contributing to social, emotional and school functioning, while this study considered an overall Psychosocial abnormality and not only individual variables.[34]

4.2. STUDY LIMITATION

Due to lack of awareness among families of children with SCD, the number of siblings screened at MNH without SCD in data the base is limited; this necessitated convenient sampling in obtaining the sample size. Also among children in comparison group 98 % were referrals from other health facilities suspected of having SCD and hence contributed in having a reasonable number of children without SCD having psychosocial abnormality since these children experienced almost similar clinical symptoms as those that are seen in children with SCD such as recurrent anaemia and number of admissions.

The comparison group was not purely normal as these children had other health problems.

Recall bias might be one of the factors contributing to increased proportion of impaired psychosocial functioning.

Lack of enough time and funds necessitated the use of comparison group from data base instead of either going to schools and screen children who are sickle cell disease free and recruit them in the study as a comparison group.

5.0. CONCLUSION

Children with SCD were shown to have more psychosocial abnormalities than children in comparison group as it was shown the prevalence is higher in SCD group.

The prevalence of school, emotional and social dimensions as psychosocial functioning were affected by SCD and abnormality in these dimensions was seen more in children with SCD compared to children without SCD.

Among the risk factors, having three or more episodes of painful crises per year is associated risk factor to psychosocial abnormality in children with SCD.

5.1. RECOMMENDATIONS

Further studies should be done on psychosocial impact of SCD on these children and the complications including adjustment and coping difficulties, depression so that proper and more evidenced based interventions can be laid down to improve their quality of health care as this parameter has been shown to be higher in this group.

Continuous psycho-education should be provided to children with SCD, primarily focusing on improving knowledge and understanding of the SCD interpreting it into a chronic disease and the psychosocial impact of the disease.

Introducing group interventions as part of motivation and support to these children, through sharing experiences and this may benefit more those children who feel isolated, with low self-esteem and confidence as this intervention is not yet part of their care and as it was shown in individual parameters of social and emotional function impairment.

Children with three or more painful episodes per year should have psychosocial assessment and those who will be found to have impaired psychosocial functioning should be sent for proper counseling.

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APPENDIXES

Appendix i: Muhimbili University of Health and Allied Sciences

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

INFORMED CONSENT FORM (ENGLISH VERSION).

ID No……

Title: Psychosocial functioning among children with sickle cell disease aged 6 - 13 years at Muhimbili National Hospital, Dar-es-salaam, Tanzania.

To the Parents/ Guardians of ……..

Foreword

Greetings! I am……..working on this research project with the aim of assessing psychosocial functioning in children with sickle cell disease and children without sickle cell disease aged 6-13 years in Muhimbili National Hospital.

Purpose of the Study

The study has a broad objective of assessing psychosocial functioning in children with sickle cell disease and children without sickle cell disease aged 6-13 years in Muhimbili National Hospital. Further it explores socio-demographic and clinical characteristics that have profound effect on psychosocial functioning on these children.

How to participate

The interviewer will ask you some questions and the response will be completed by the interviewer after signing at the end of this informed consent form.

Risks

We do not expect any harm during the course of your participation. No blood will be taken during this process. Moreover there is no any medication or immunization provided so we do not expect any harm will happen to your child because of joining this study.

Confidentialiy

We would like to assure you that all the information that you will provide will remain confidential and will be used for research purpose only. No one will be allowed to see or go through your answers except the principle investigator only.

Consent

I have read and understood the explanation of the study. I accept for my child to be examined and participate in the study.

Signature of the Parent/Guardian.....

Relationship to the child.....

Date.....

Child assent to participate? YES. NO.

For more information or clarification you may contact one of the Doctors mentioned below,

Director of Reasearch and Publications

Prof. Mainen Moshi, Tel. 022 2152489

Dr. Mwajuma Ahmada , 0715272560

Dr. R. Kisenge, 0784526461

Dr. E. Kija, 0652555589

Appendix ii: Muhimbili University of Health and Allied Sciences

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

INFORMED CONSENT FORM (SWAHILI VERSION).

Namba ya fomu……

Hali ya maisha ya kiafya ya watoto wenye umri kati ya miaka 6-13 wanaoishi na wasioishi na sickle cell, Dar es salaam, Tanzania

Kwa Mzazi/Mlezi wa ……..

Makubaliano ya kushiriki dodoso

Utangulizi

Habari! Jina langu ni……..Nafanya kazi katika huu utafiti wenye lengo la kuchunguza hali ya maisha ya kiafya ya watoto wenye umri kati ya miaka 6-13 wanaoishi na sickle cell kulinganisha na wasioishi na sickle cell Dar es salaam, Tanzania**.**

Malengo ya utafiti

Utafiti huu una lengo kuu la kuangalia hali ya maisha ya watoto wanaoishi na sickle cell kwa kulinganisha na wasioishi na sickle cell wenye umri kati ya miaka 6-13. Pia una lengo la kuangalia Uhusiano wa hali ya maisha na mazingira anayoishi.

Jinsi ya kushiriki

Mtafiti atakuuliza maswali na majibu yatajazwa na mtafiti mwenyewe. Hii itafanyika mara baada ya wewe kukubali na kusaini mwisho wa fomu hii.

Madhara

Hatutegemei utafiti huu kuwa na madhara yoyote kwako au kwa mtoto wako. Utafiti huu hautahusika na kutoa damu kwa vipimo. Zaidi hakuna dawa au kinga yoyote utakayopewa. Hivyo hakuna madhara yoyote yatayokupata wewe au mtoto wako kwa kushiriki katika utafiti huu.

Utunzaji wa Siri

Tunapenda kukuhakikishia kwamba,maelezo yote utakayotoa itakuwa siri na yatatumika kwa utafiti tu.Hakuna mtu yoyote atakaye ruhusiwa kusoma majibu yako isipokuwa mtafiti mkuu na wasaidizi wake tu.

Kukubali

Nimesoma na kuelewa madhumuni ya utafiti huu na nimekubali mimi na mtoto wangu kushiriki katika utafiti huu.

Sahihi ya Mzazi/Mlezi.....

Uhusiano na Mtoto.....

Tarehe.....

Mtoto amekubali? Ndiyo . Hapana.

Kama una maswali kuhusu utafiti huu unaweza kuwasiliana na yoyote kati ya madaktari hawa;

Mkurugenzi wa Utafiti

Prof. Mainen Moshi, Tel. 022 2152489

Dr. Mwajuma Ahmada , 0715272560

Dr. R. Kisenge, 0784526461

Dr. E. Kija, 0652555589

Appendix iii: Questionnaire (English Version)

PSYCHOSOCIAL FUNCTIONING AMONG CHILDREN WITH SICKLE CELL DISEASE AGED 6 - 13 YEARS AT MUHIMBILI NATIONAL HOSPITAL DAR-ES-SALAAM, TANZANIA.

I would like you to fill some of the few questions about yourself and your health. The information you will provide will help in assessing **psychosocial functioning in children with sickle cell disease and children without sickle cell disease** and following up of how these children feel and able to do their usual activities.

APPENDIX 1: HBSC 1997/8 QUESTIONNAIRE: CORE QUESTIONS
ALL NOTES/INSTRUCTIONS ON RE-WORDING AND/OR ADAPTATION FOR NATIONAL CONTEXT ARE WRITTENIN *Bold italics.*
VALUE LABELS ARE INDICATED BESIDE BOXES: (1) (2) (3) ETC.

1. Sex
(1) Male
(2) Female
2. What month were you born? .....
3. What year were you born? .....
4. What class are you in?

1. Kindergarten
2. Primary
3. Secondary
[Use appropriate grade-level for your population*]*
Changed to

1. Not yet enrolled to school
2. Kindergarten
3. Primary
4. Secondary

5. What are your parents jobs? Please describe exactly what they do, for example shop

Assistant, farm worker, lorry driver, dentist, hairdresser, teacher. You can write don't know or has no paid job at the moment or unemployed.

My Father: _____

My Mother: _____

6. What do you think you will be doing when you finish high school ***[compulsory education]***?**[Adapt to own national context in order to separate:**

Continued education, vocational training/apprenticeship/trade and leaving school*]*

(1) College or University

(2) Vocational or technical school

(3) Apprenticeship / trade

(4) Working

(5) Unemployed

7. In your opinion: What does your class teacher(s) think about your school performance compared to your classmates?

(1) Very good

(2) Good

(3) Average

(4) Below average

8. How do you feel about school at present?

(1) I like it a lot

(2) I like it a bit

(3) I don't like it very much

(4) I don't like it at all

9. How much money do you usually get each week? (This includes pocket money and money you earn yourself).....

Changed as

"How much money do you usually get each week? (This includes pocket money only)"

10. Have you ever smoked tobacco? (At least one cigarette, cigar or pipe)

(1) Yes

(2) No

11. How often do you smoke tobacco at present?

(1) Every day

(2) At least once a week but not every day

(3) Less than once a week

(4) I do not smoke

12. How many cigarettes do you usually smoke in a week?..... Cigarettes a week

13. Have you ever tasted an alcoholic drink? (That means beer, wine or spirits like... **Add other drinks categories and examples as appropriate**)

(1) Yes

(2) No

(3) Don't know

14. At present, how often do you drink anything alcoholic, such as beer, wine or spirits like....

[Add appropriate examples]? Try to include even those times when you only drink a small amount.(Please tick one box for each line)

	Every day	Every week	Every month	Rarely	Never
	(1)	(2)	(3)	(4)	(5)
Beer					
Wine					
Spirits/Liquor					

[Cider and other drinks categories can be added as relevant for each country]

15. Have you ever had so much alcohol that you were really drunk?

(1) No, never

(2) Yes, once

(3) Yes, 2-3 times

(4) Yes, 4-10 times

(5) Yes, more than 10 times

16. O UTSIDE S CHOOL HOURS : How OFTEN do you usually exercise in your free time so much that you get out of breath or sweat?

(1) Every day

(2) 4 to 6 times a week

(3) 2 to 3 times a week

(4) Once a week

(5) Once a month

(6) Less than once a month

(7) Never

17. O UTSIDE SCHOOL HOURS: How many HOURS a week do you usually exercise in your free time so much that you get out of breath or sweat?

(1) None

(2) About half an hour

(3) About 1 hour

(4) About 2 to 3 hours

(5) About 4 to 6 hours

(6) 7 hours or more

18. How often do you brush your teeth?

(1) More than once a day

(2) Once a day

(3) At least once a week but not daily

(4) Less than once a week

(5) Never

19. How often do you eat or drink any of the following?

(Please tick one box for each line)

	More than once a day but not daily (1)	Once a day (2)	Once a week (3)	Rarely (4)	Never (5)
a) Fruit					
b) Raw vegetables					
c) Cooked vegetables					
d) Coke or other soft drinks that contain sugar					
e) Sweets (candy or chocolate)					
f) Cakes or pastries					
g) Potato crisps					
h) Chips/fried potatoes					
i) Hamburgers, hot dogs, sausages					
j) Whole wheat or rye bread					
k) Low fat milk					
l) Whole fat milk					
m) Coffee					

20. Are you on a diet to lose weight?

(1) No, because my weight is fine

(2) No, but I do need to lose weight

(3) Yes

21. How often do you use a seat belt when you sit in a car?

(1) Always

(2) Often

(3) Sometimes

(4) Rarely or never

(5) Usually there is no seat belt where I sit

(6) Never travel by car

22. How often do you wear a helmet when you ride a bicycle?

(1) Always

(2) Often

(3) Sometimes

(4) Rarely or never

(5) I do not ride bicycles

23. How healthy do you think you are?

(1) Very healthy

(2) Quite healthy

(3) Not very healthy

24. In general, how do you feel about your life at present?

(1) I feel very happy

(2) I feel quite happy

(3) I don't feel very happy

(4) I'm not happy at all

25. Do you ever feel lonely?

(1) Yes, very often

(2) Yes, rather often

(3) Yes, sometimes

(4) No

26. In the last 6 months: how often have you had the following? (Please tick one box for each line)

About every day (1) More than once a week (2) About every once a week(3) About every month (4) Rarely or never (5)

a) Headache

b) Stomach-ache

c) Back ache

d) Feeling low

e) Irritability or bad temper

f) Feeling nervous

g) Difficulties in getting to sleep

h) Feeling dizzy

27. How often do you feel tired when you go to school in the morning?

(1) Rarely or never

(2) Occasionally

(3) 1-3 times a week

(4) 4 or more times a week

28. During the last month have you taken any medicine or tablets for the following:

(Please tick one box for each line)

No Yes, once Yes, more than once

(1) (2) (3)

a) Headache

b) Stomach-ache

c) Difficulties in getting to sleep

d) Nervousness

29. How many hours a day do you usually watch TV?

(1) Not at all

(2) Less than half an hour a day

(3) Half an hour to 1 hour

(4) 2 to 3 hours

(5) 4 hours

(6) More than 4 hours

30. How many hours a week do you usually play computer games?

(1) Not at all

(2) Less than 1 hour a week

(3) 1 - 3 hours

(4) 4 - 6 hours

(5) 7 - 9 hours

(6) 10 hours or more

31. Please tick which of these people live at your home. If your mother and father live in different places, answer for the home where you live most of the time. (Please tick one box for each line)

I live with:	Yes	No
	(1)	(2)
a) Mother		
b) Father		
c) Stepmother		
d) Stepfather		

32. How many of the following persons **live in your home**?

a) Sisters: .....

b) Brothers: .....

c) Grandparents: .....

d) Other people: .....

33. How easy is it for you to talk to the following persons about things that really bother you?

(Please tick one box for each line)

	Very easy	Easy	Difficult	Very difficult	Don't have or see this person
	(1)	(2)	(3)	(4)	(5)
a) Father					
b) Mother					
c) Elderbrother (s)					
d) Eldersister (s)					
e) Friends of the same sex					
f) Friends of the opposite sex					

34. How many close friends do you have?

(1) None

(2) One

(3) Two

(4) Three or more

35. Is it easy or difficult for you to make new friends?

(1) Very easy

(2) Easy

(3) Difficult

(4) Very difficult

36. How often do you spend time with friends right after school?

(1) 4-5 days a week

(2) 2-3 days a week

(3) Once a week or less

(4) Have no friends right now

37. How many evenings per week do you usually spend out with your friends?

0 1 2 3 4 5 6 7 evenings

38. Is there anything about your body you would like to change?

(1) Yes

(2) No

39. Do you think your body is

(1) Much too thin

(2) A bit too thin

(3) About the right size

(4) A bit too fat

(5) Much too fat

(6) I don’t think about it

40. Do you think you are:

(1) Very good looking

(2) Quite good looking

(3) About average

(4) Not very good looking

(5) Not at all good looking

(6) I don't think about my looks

41. How often do you feel..... (Please tick one box for each line):

	Always (1)	Often (2)	Sometimes (3)	Rarely (4)	Never (5)
Left out of things					
Helpless					
Confident in yourself					

APPENDIX 2: HBSC 1997/8 QUESTIONNAIRE: FOCUS QUESTIONS (MANDATORY)

42. Please read these statements about your school carefully. For each statement tick one box.

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)
(a) In our school the students take part in making rules					
(b) The students are treated too severely /strictly in this school					
(c) The rules in this school are fair					
(d) Our school is a nice place to be					
(e) I feel I belong at this school					

43. Please tick one box for each of the statements about your teachers.

If you have only one teacher, think of this person when you answer the questions.

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Stronglydisagree (5)
(a) I am encouraged to express my own views in my class(es)					
(b) Our teachers treat us fairly					
(c) When I need extra help, I can get it					
(d) My teachers are interested in me as a person					

44. Please tick one box for each statement about the students in your class(es).

Always	Often	Sometimes	Rarely	Never
(1)	(2)	(3)	(4)	(5)

(a) The students in my class(es)enjoy being together

(b) Most of the students in my class (es) are kind and helpful

(c) Other students accept me as I am

45. How often do you think that going to school is boring?

(1) Very often

(2) Often

(3) Sometimes

(4) Rarely

(5) Never

Here are some questions about bullying. We say a student is BEING BULLIED when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn't like. But it is NOTBULLYING when two students of about the same strength quarrel or fight.

46. How often have you been bullied in school this term?

(1) I haven't been bullied in school this term

(2) Once or twice

(3) Sometimes

(4) About once a week

(5) Several times a week

47. How often have you taken part in bullying other students in school this term?

(1) I haven't bullied others in school this term

(2) Once or twice

(3) Sometimes

(4) About once a week

(5) Several times a week

48. How often does it happen that other students don't want to spend time with you at school and you end up being alone?

(1) It hasn't happened this term

(2) Once or twice

(3) Sometimes

(4) About once a week

(5) Several times a week

49. How many days did you ***skip*** classes or school this term? **[Use appropriate word to indicate truancy)**

(1) 0 days

(2) 1 day

(3) 2 days

(4) 3 days

(5) 4 or more days

50. Please tick one box for each statement about your parents. If your mother and father live in different places, answer for the home where you live most of the time.

Always Often Sometimes Rarely Never

(1) (2) (3) (4) (5)

(a) If I have problems at school, my parents are ready to help

(b) My parents are willing to come to school to talk to teachers

(c) My parents encourage me to do well at school

51. Do you feel safe at school?

(1) Always

(2) Often

(3) Sometimes

(4) Rarely

(5) Never

52. Please tick one box for each of these statements:

	Strongly agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
(a) My parent s expect too much of me at school					
(b) My teachers expect too much of me at school					

53. How pressured do you feel by the schoolwork you have to do?

(1) Not at all

(2) A little

(3) Some

(4) A lot

54. Does your family have a car or a van?

(1) No

(2) Yes, one

(3) Yes, two or more

55. Do you have your own bedroom for yourself?

(1) Yes

(2) No

56. How well off do you think your family is?

(1) Very well off

(2) Quite well off

(3) Average

(4) Not very well off

(5) Not at all well off

57. During the past year, how many times did you travel away on holiday (vacation) with your family?

(1) Not at all

(2) Once

(3) Twice

(4) More than twice

END OF MANDATORY QUESTIONNAIRE

CLINICAL CHARACTERISTICS.

1. Have u ever been admitted since last year?

1. Yes 2. No

2. If yes, how many times

1. Once 2. Twice 3.Thrice 4. 4 or more times

3. How many blood transfusions have you received since last year?

1. Once 2. Twice 3.Thrice 4. 4 or more times 5. None.

4. How many episodes of painful crises you have had since last year?

1. Once 2. Twice 3.Thrice 4. 4 or more times 5. None.

5. How many episodes of malaria you have had since last year?

1. Once 2. Twice 3.Thrice 4. 4 or more times 5. None

Appendix iv: Kiambatisho 1: HBSC 1997/8 Dodoso: Maswali ya Msingi

1. Jinsia
   (1) Kiume
   (2) Kike
2. Mwezi wa kuzaliwa……
3. Mwaka wa kuzaliwa……
4. Unasoma darasa la ngapi
   (1) Chekechea
   (2) Msingi
   (3) Sekondari
5. Wazazi wako wanafanya kazi gani? Eleza ni nini hasa wanachokifanya kwa mfano muuza duka,dereva, daktari wa meno, mwalimu, n.k. Unaweza kuandika sijui au hawana kazi ya kulipwa au hawajaajiriwa.
   Baba……
   Mama …….
6. Unafikiri utafanya kazi gani baada ya kumaliza elimu ya lazima (kidato cha nne)
   (1) Chuo kikuu
   (2) Ufundi au mafunzo ya kiufundi
   (3) Biashara au mafunzo
   (4) Kazi
   (5) Kutokua na ajira
   (6) Sijui

7. Kwa maoni yako: Mwalimu/walimu wako anafikiria nini kuhusu utendaji wako kimasomo ukilinganisha na wanafunzi wenzako

(1) Mzuri sana

(2) Mzuri

(3) Wastani

(4) Chini ya wastani

8. Unafikiriaje kuhusu shule yako kwa sasa ?

(1) Unaipenda sana

(2) Unaipenda kidogo

(3) Huipendi sana

(4) Huipendi kabisa

9. Ni kiasi gani cha fedha kwa kawaida unapata kila wiki?

……

10. Umeshawahi kuvuta tumbaku

(1) Ndio

(2) Hapana

11. Ni mara ngapi unavuta tumbaku kwa sasa?

(1) Kila siku

(2) Japo mara moja kwa wiki lakini sio kila siku

(3) Chini ya mara moja kwa wiki

(4) Sivuti tumbaku

12. Ni sigara ngapi kwa kawaida unavuta ndani ya wiki? ..... sigara kwa wiki

13. Ulishawi kuonja kinywaji cha pombe? (Inamaana bia, mvinyo,n.k)

(1) Ndio

(2) Hapana

(3) Sijui

14. Kwa sasa ni mara ngapi unakunywa kinywaji cha pombe kama bia,mvinyo n.k Jaribu kujumuisha hata zile nyakati unazo kunywa kiwango kidogo.(Tafadhali weka alama ya ndio kwenye sanduku kwa kila mstari)

	Kila siku	kila wiki	kila mwezi	Mara chache	Kamwe
	(1)	(2)	(3)	(4)	(5)
Bia					
Mvinyo					
Pombe					

15. Ulishawahi kunywa pombe mpaka ukalewa sana?

(1) Hapana, kamwe

(2) Ndiyo, mara moja

(3) Ndiyo, mara 2 mpaka 3

(4) Ndiyo, mara 4 mpaka 10

(5) Ndio, zaidi ya mara 10

16. NJE YA MASAA YA SHULE: Ni mara ngapi kwa kawida unafanya mazoezi katika muda unapokuwa huru mpaka unatoa pumzi au jasho?

(1) Kila siku

(2) Mara 4 mpaka 6 kwa wiki

(3) Mara2 mpaka 3 kwa wiki

(4) Mara moja kwa wiki

(5) Mara moja kwa mwezi

(6) Chini ya mara moja kwa mwezi

(7) Kamwe

17. NJE YA MASAA YA SHULE: Ni masaa mangapi kwa kawaida unafanya mazoezi katika muda unapokuwa huru mpaka unatoa pumzi au jasho?

(1) Hakuna

(2) Kama nusu saa

(3) Kama saa moja

(4) Kama masaa 2 mpaka 3

(5) Kama masaa 4 mpka 6

(6) Kama masaa 7 na zaidi

18. Ni mara ngapi unasugua meno yako ?

(1) Zaidi ya mara moja kwa siku

(2) Mara moja kwa siku

(3) Angalau mara moja kwa wiki lakini sio kila siku

(4) Chini ya mara moja kwa wiki

(5) Kamwe

19. Ni mara ngapi unakula au kunywa kati ya vyovyote vifuatavyo.(Tafadhali weka alama ya ndio kwenye sanduku kwa kila mstari)

	Zaidi ya mara moja	Mara moja kwa siku	Mara moja kwa wiki	Mara chache	Kamwe
	(1)	(2)	(3)	(4)	(5)
(a) Matunda					
(b) Mboga mboga mbichi					
(c) Mboga mboga za kupikwa					
(d) Coka cola au vinywaji baridi vyengine vinavyokuwa na sukari					
(e) Pipi, chocolate					
(f) Keki au pastries					
(g) Viazi crips					
(h) Chipsi /Viazi vya kukasnga					

(i) Hamburgers, sausages, hot dogs

(j) Mkate wa ngano mzima

(k) Maziwa yenyemafuta kidogo

(l) Maziwa yenye mafuta mengi

(m) Kahawa.

20. Uko kwenye mlo kwa ajili ya kupunguza/ kupoteza uzito?

(1) Hapana kwa sababu uzito wangu uko sawa

(2) Hapana, lakini nahitaji kupunguza uzito

(3) Ndiyo

21. Ni mara ya ngapi hutumia mkanda wa kiti unapokaa ndani ya gari ?

(1) Daima

(2) Mara nyingi

(3) Wakati mwengine

(4) Mara chache au kamwe

(5) Ninapokaa hakuna mkanda wa kiti

(6) Sijawahi kusafiri kwa gari

22. Ni mara ngapi unavaa chapeo unapoendesha baskeli?

(1) Daima

(2) Mara nyingi

(3) Wakati mwengine

(4) Mara chache au kamwe

(5) Siendeshi baskeli

23. Unafikiria una afya kiasi gani?

(1) Afya sana

(2) Afya kiasi

(3) Sio afya nzuri

24 .Kwa ujumla,unafikiriaje maisha yako kwa sasa?

(1) Nahisi furaha sana
(2) Nahisi furaha kiasi
(3) Sihisi furaha sana
(4) Sina furaha kabisa

25. Ulishawahi kujihisi mpweke?

(1) Ndio , mara nyingi

(2) Ndiyo, badala ya mara nyingi

(3) Ndiyo, wakati mwengine

(4) Hapana

26. Katika kipindi cha miezi sita iliopita, ni mara ngapi umeuguwa yafuatayo (Tafadhali weka alama ya ndiyo kwenye sanduku kwa kila mstari)

Kila siku (1) Zaidi ya mara moja kwa wiki(2) Kila wik(3)i Kila mwezi(4) Mara chache au Kamwe (5)

(1)Maumivu ya kichwa
(2) Maumivu ya tumbo
(3) Maumivu ya mgongo
(4) Kujihisi asili (low)
(5) Ukimwa
(6) Kujihisi neva
(7) Vigumu kupata usingizi
(8) Kujihisi kizunguzungu

27. Ni mara ngapi unajihisi kuchoka unapokwenda shule wakati wa asubuhi ?

(1) Mara chache au kamwe

(2) Mara kwa mara

(3) Mara 1-3 kwa wiki

(4) Mara 4 au zaidi kwa wiki

28 .Mwezi uliopita ulitumia dawa zozote au vidonge kwa ajili ya yafuatayo? (Tafadhali weka alama ya ndiyo kwenye sanduku kwa kila mstari)

	Hapana	Ndiyo,mara moja	Ndiyo zaidi ya mara moja
	(1)	(2)	(3)
(1)	Maumivu ya kichwa		
(2)	Maumivu ya tumbo		
(3)	Ugumu wa kupata usingizi		
(4)	Neva		

29. Ni masaa mangapi kwa sikui kwa kawaida unangalia luninga?

(1) Siangalii kabisa

(2) Chini ya saa moja kwa siku

(3) Nusu saa mpaka saa moja

(4) Masaa 2 mpaka 3

(5) Masaa 4

(6) Zaidi ya masaa 4

30. Ni masaa mangapi kwa wiki kwa kawaida unacheza mchezo wa kompyuta?

(1) Sichezi kabisa

(2) Chini ya saa moja kwa wiki

(3) Saa 1 mpaka 3

(4) Masaa 4 mpaka 6

(5) Masaa 7 mpaka 9

(6) Masaa 10 na zaidi.

31. Tafadhali weka alama ya ndiyo,na watu gani wanaoishi nyumbani kwenu.Kama baba na mama wanaishi sehemu tofauti, jaza kwa mahali unapoishi muda mwingi zaidi. (Tafadhali weka alama ya ndiyo kwenye sanduku kwa kila mstari.)

Naishi na :	Ndiyo	Hapana
	(1)	(2)
(a) Mama		
(b) Baba		
(c) Mama wa kambo		
(d) Baba wa kambo		

32.Ni wangapi kati ya wafuatao wanaishi nyumbani kwenu ?

(a) Dada……..

(b) Kaka…….

(c) Mababu/mabibi…….

(d) Watu wengineo…….

33.Ni rahisi kivipi kwako kuzungumza na watu wafuatao kuhusu mambo yanayokusumbua ? (Tafadhali weka alama ya ndiyo kwenye sanduku kwa kila mstari)

Rahisi sana	Rahisi	Vigumu	Vigumu sana	Sina au simuoni mtu huyu
(1)	(2)	(3)	(4)	(5)

(a) Baba

(b) Mama

(c) Kaka

(d) Dada

(e) Marafiki wa jinsia moja

(f) Marafiki wa jinsia tofauti

34. Una marafiki wa karibu wangapi?

(1) Sina

(2) Mmoja

(3) Wawili

(4) Watatu na zaidi

35. Ni rahisi au vigumu kwako kupata marafiki wapya?

(1) Rahisi sana

(2) Rahisi

(3) Vigumu

(4) Vigumu sana

36. Ni mara ngapi unatumia muda na marafiki zako baada ya kutoka shule.

(1) Siku 4 mpaka 5 kwa wiki

(2) Siku 2 mpaka 3 kwa wiki

(3) Mara moja kwa wiki au chini ya mara moja

(4) Sina marafiki kwa sasa.

37. Ni jioni ngapi kwa wiki unatumia muda nje na marafiki zako?

0 1 2 3 4 5 6 7 jioni

38. Kuna kitu chochote ongependa kibadilike kuhusu mwili wako?

(1) Ndiyo

(2) Hapana

39. Unafikiri mwili wako ni

(1) Mwembamba sana

(2) Mwembamba kiasi

(3) Ukubwa sawa

(4) Mnene kiasi

(5) Mnene sana

(6) Sifikirii kuhusu mwili wangu

40. Unafikiri wewe ni ?

(1) Una muonekano mzuri sana

(2) Una muonekano mzuri kiasi

(3) Wa kawaida

(4) Sio mwenye muonekano mzuri sana

(5) Huna muonekano mzuri kabisa

(6) Si fikirii kuhusu muonekano wangu

41. Ni mara ngapi unajihisi ……. (tafadhali weka alama ya ndiyo kwenye sanduku kwa kila mstari)

Daima	Mara nyingi	Wakati mwengine	Mara chache	Kamwe
(1)	(2)	(3)	(4)	(5)

Kuachwa nje ya mambo

Husaidiki/ wanyonge

Hujiamini

KIAMBATISHO 2: HBSC 1997/98 DODOSO: MASWALI YA KUZINGATIA (LAZIMA)

42 Tafadhali soma hizi kauli kuhusu shule yako kwa makini. Kwa kila kauli weka alama ya ndiyo kwenye sanduku

Kukubali kwa nguvu	Kukubali	Sio kukubali wala kukataa	Kukataa	Kukataa kwa nguvu
(1)	(2)	(3)	(4)	(5)

(a) Shuleni kwetu wanafunzi wanahusika katika kutunga sheria

(b) Wanafunzi wanahudumiwa vibaya shuleni.

(c) Sheria za shuleni kwetu ni nzuri

(d) Shuleni kwetu ni sehemu nzuri

(e) Nahisi, mimi namilikiwa na shule hii.

43. Tafadhali weka alama ya ndiyo kwenye kisanduku kimoja kwa kila kauli kuhusu walimu wako.Kama una mwalimu mmoja, fikiria mtu huyu anapojibu maswali

Nakubali kwa nguvu	Nakubali	Sikubali wala sikatai	Nakataa	Nakataa kwa nnguvu
(1)	(2)	(3)	(4)	(5)

(a) Ninahamasishwa kutoa maoni au kuchangia mawazo darasani

(b) walimu wetu wanatuhudumia vizuri

(c) Ninapohitaji msaada zaidi ninaweza kupata

(d) Walimu wangu wananipenda kama binadamu

44. Tafadhali weka alama ya ndiyo,kwenye kisanduku kimoja kwa kila kauli kuhusu wanafunzi darasani kwako.

Daima	Mara nyingi	Wakati mwengine	Mara chache	Kamwe
(1)	(2)	(3)	(4)	(5)

(a) Wanafunzi darasani kwetu wanapenda kuwa pamoja

(b) Karibu wanafunzi wote darasani wanasaidia na wana huruma

(c) Wanafunzi wengine wananikubali mimi kama nilivyo

45. Ni mara ngapi unafikiri kwenda shuleni hufurahi i?

(1) Mara nyingi sana

(2) Mara nyingi

(3) Wakati mwengine

(4) Mara chache

(5) Kamwe

Haya ni baadhi ya maswali kuhusu uonevu. Tunasema mwanafunzi anaonewa na wanafunzi au mwanafunzi wenzake, kusema au kumfanyia mambo yasiyomfurahisha. Pia ni uonevu endapo mwanafunzi anataniwa mara kwa mara mambo asiyoyapenda. Lakini sio uonevu wanafunzi wawili wenye nguvu sawa wanapogombana au kupigana.

46. Ni mara ngapi umeonewa shuleni muhula huu?

(1) Sijaonewa shuleni muhula huu

(2) Mara moja au mbili

(3) Wakati mwengine

(4) Mara moja kwa wiki

(5) Mara nyingi kwa wiki

47. Ni mara ngapi umeshiriki katika kuonea wanafunzi wengine shuleni katika muhula huu?

(1) Sijaonea wanafunzi wengine muhula huu

(2) Mara moja au mbili

(3) Wakati mwengine

(4) Mara moja kwa wiki

(5) Mara nyingi kwa wiki.

48. Imetokea mara ngapi wanafunzi wenzako (wengine) hawataki kuwa pamoja na wewe shuleni na kuishia kuwa peke yako?

(1) Haijatokea muhula huu

(2) Mara moja au mbili

(3) Wakati mwengine

(4) Mara moja kwa wiki

(5) Mara nyingi kwa wiki

49. Ni siku ngapi ulikosa masomo au kwenda shule muhula huu? (Tumia neno mwafaka linaloonesha utoro)

(1) Siku 0

(2) Siku moja

(3) Siku mbili

(4) Siku tatu

(5) Siku nne na zaidi

50. Tafadhali weka alama kwenye sanduku kwa kila kauli kama baba na mama wanaishi sehemu tofauti, jaza kwa mahali unapoishi muda mwingi zaidi

Daima	Mara nyingi	Wakati mwegine	Mara chache	Kamwe
(1)	(2)	(3)	(4)	(5)

(a) Kama na matatizo shuleni wazazi wangu wako tayari kunisaidia

(b) Wazazi wangu wako tayari kuja shuleni kuzungumza na walimu

(c) Wazazi wangu wanahimiza nifanye vizuri shuleni

51. Unajihisi uko salama shuleni?

(1) Daima

(2) Mara nyingi

(3) Wakati mwengine

(4) Mara chache

(5) Kamwe

52 .Tafadhali weka alama kwenye sanduku kwa kila kauli

Kikubali kwa nguvu	Kukubali	Sikubali wala sikatai	Kukataa	Kukataa kwa nguvu
(1)	(2)	(3)	(4)	(5)

(a) Wazazi wangu wananitarajia/ wananitegemea kufanya vizuri sana shuleni

(b) Walimu wangu wananitarajia/ wananitegemea kufanya vizuri sana shuleni

53. Unahisi shinikizo kwa kazi za shule unazotakiwa kufanya?

(1) Hakuna kabisa

(2) Kidogo

(3) Baadhi

(4) Sana

54. Familia yako inamiliki gari?

(1) Hapana

(2) Ndiyo, moja

(3) Ndiyo, mawili zaidi

55. Una chumba chako mwenyewe?

(1) Ndiyo

(2) Hapana

56. Unafikiria familia yako inauwezo kiasi gani?

(1) Inauwezo mzuri sana

(2) Ina uwezo kiasi

(3) Wastani

(4) Haina uwezo sana

(5) Haina uwezo kabisa (masikini)

57. Kipindi cha mwaka jana, ni mara ngapi ulisafiri kwenda likizo na familia yako

(1) Sikusafiri kabisa

(2) Mara moja

(3) Mara mbili

(4) Zaidi ya mara mbili

MWISHO WA DODOSO LAZIMA

TABIA ZA KLINIKI

1. Ulishawahi kulazwa tangu mwaka jana mpaka sasa?

1.Ndiyo 2. Hapana

2 .Kama ndiyo, ni mara ngapi.

1. Moja 2.Mbili 3.Tatu 4. Nne na zaidi

3. Ni mara ngapi umeshaongezwa damu tangu mwaka jana mpaka sasa ?

1. Moja 2. Mbili 3. Tatu 4.Nne na zaizi 5. Sijawhi kuongezwa

4. Ni mara ngapi umepatwa na maumivu ya viungo tangu mwaka jana mpaka sasa?

1. Moja 2. Mbili 3. Tatu 4.Nne na zaidi 5.Sijawahi kuumwa

5. Umeuguwa malaria mara ngapi tangu mwaka jana mpaka sasa?

1. Moja 2 .Mbili 3. Tatu 4.Nne na zaidi 5 sijawahi kuumwa

CLINICAL EXAMINATION.

Main complains…….

…….

…….

Vital signs Temp…….BP…….Pulse…….RR……..

REVIEW OF SYSTEMS

	Yes	No		Yes	No		Yes	No
FEVER			COUGH			GENITAL		
JOINT PAINS			DIB			NEUROLOGICAL		
FATIQUE			CHEST PAIN			CVS		
HEADACHE			EYES			SKIN		
ABD. DISCMF						ENT		
						OTHERS…….		

PHYSICAL EXAMINATION

	Abnormal	Normal		Abnormal	Normal
GENERAL CONDTN			HEART		
ORAL			ABDOMEN		
SKIN/MSS			ENT		
LUNGS			GENITAL		
NEUROLOGICAL			OTHERS……		