QUALITY OF LIFE IN BURN INJURY SURVIVORS USING WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCALE II AT MUHIMBILI NATIONAL HOSPITAL

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Department of General Surgery

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By

Dr. Kassim M Bahsan

A Dissertation Submitted in (partial) Fulfillment of the Requirements of the Degree of Master of Medicine (General Surgery) at

Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance for Muhimbili University of Health and Allied Sciences a dissertation entitled: "**Quality of Life in Burn Injury Survivors Using World Health Organization Assessment Scale II at Muhimbili National Hospital"** in (partial) fulfillment of the requirements for the Master of Medicine (General Surgery) of the Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

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DECLARATION AND COPYRIGHT

I, **Dr. Kassim M Bahsan**, affirm that this dissertation is my own original and has not been submitted to any other university to obtain the same or a different degree.

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Signature…… Date……

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Lastly, I would want to use this chance to express my gratitude to my guardians and parents for their unending love and support; they have been there for me at every stage of life.

DEDICATION

I am dedicating this work to my beloved mother, Arab Yassin, and my guardians (Godparents) Prof Karim Manji and Siddika Karim.

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LIST OF ABBREVIATIONS

BS	:	Burn survivors
CI	:	Confidence interval
OLS	:	Ordinary Least Square
QoL	:	Quality of life
SAS	:	Statistical Analysis System
SD	:	Standard deviation
WHODAS-II	:	World health organization disability assessment Scale – II

1.2 Problem statement

Most burn victims, whether they are toddlers or adults, have their lives drastically altered as a result of the incident. Children who have malformations quit school due to concern that they won't be able to engage with other children, especially if those children have bad attitudes toward them, like bullying and stigmatization. Additionally, people who have burn-related sequelae like amputations, contractures, and other abnormalities have substantially less mobility, and some even use crutches for walking. And due to contractures, some bodily functions might never fully recover. This would have an impact on daily activities, including school for kids and employment for adults. The utilization of standardized assessment tools, such as the WHODAS II, to evaluate the QoL of burn survivors (BS) in this setting has not been explored. Therefore, there is a need to investigate the QoL of burn survivors at Muhimbili National Hospital (MNH) using WHODAS-II, which can provide a comprehensive assessment of disability and functioning across various domains.

DEFINITIONS

Burn injury refers to a specific type of tissue damage characterized by coagulative necrosis.

Quality of life refers to an individual's overall well-being and satisfaction with various aspects of their life. It is a multidimensional concept that encompasses physical, mental, social, and emotional aspects.

Burn survivors are individuals who have experienced burn injuries, ranging from minor to severe.

Disability assessment is used as a predictor of the factors that medical diagnosis alone fails to anticipate; these include service needs, level of care, treatment outcomes, and length of hospital stay.

Psychological distress is meant to describe generalized signs of stress, fear, and misery as a result of the consequences of burn injuries. High levels of psychological distress are indicative of impaired mental health and may reflect common mental disorders, like depressive and anxiety disorders

ABSTRACT

Background: Burn injury is a global problem affecting people of all ages. For instance, globally, 800,000 new cases of burns were reported in 2019, and 100,000 new deaths were reported most of it was confined to children under the age of < 4 years. In sub-Saharan Africa, it is estimated that 18,000–30,000 children suffer burn injuries every year following burn-related accidents. Among all injuries in children requiring visits to health centers in Dar es Salaam 26% were due tburns, with the majority occurring at home while doing household chores.

Objective: To assess the long-term psychological distress and quality of life among burn survivors using WHODAS-II at MNH.

Methodology: This was a cross-sectional observational study done at MNH for 5 months, from September 2023 to March 2024. The study population involved pediatric and adult burn survivors, capturing different age groups' challenges. We admitted them to MNH, treated them there, and then released them to either attend a clinic or no longer seek medical care. We retrieved their contact information from the medical records, called those who no longer sought medical care, and invited them for an interview. The data was processed and analyzed using SPSS version 23. Categorical variables were depicted using proportions and frequency tables, while continuous variables were quantified using statistical measures such as the mean, median, standard deviation, and percentage. Other statistical tests, such as the t-test and Spearman correlation coefficient, were used.

Results: This study included 84 participants, with the majority being males (79.8%). We used the standardized assessment scale tool WHODAS-II, to assess the participants. On the TBSA, participants with greater surface area had a poor mean score of life across all domains of life. This also had a direct correlation with the location of the burn; the victims in exposed and unexposed areas had a poorer quality of life compared to either exposed or unexposed assessed alone. The study found a peculiar correlation between the burn age factor and an individual's quality of life: the greater the burn age, the better the quality of

life. Finally, this study found no difference in the quality of life between burn victims before and after school.

Conclusion: The study reveals burn survivors face unique challenges in various aspects of their lives, including social and psychological effects. It highlights the need for healthcare providers, legislators, and rehabilitation specialists to strategize and direct therapies such as psychological evaluation and physiotherapy for these individuals. A large-scale study across Tanzania is crucial to better understand these experiences and influence policymakers to promote rehabilitation and reintegration.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of Study

Burn injuries are a significant health issue with far-reaching physical, psychological, and social consequences. They occur when the body is exposed to thermal, chemical, electrical, or radiation sources that exceed its tolerance, resulting in tissue damage. Burn injuries are a global public health concern, affecting individuals of all ages, genders, and socioeconomic backgrounds. Burn injuries can have devastating physical, psychological, and social impacts on individuals, often leading to long-term disability and diminished quality of life (QoL) (1). Depending on the burn's degree, the burn's effects include pain, infections, scarring, wound contractures, amputations, psychological trauma, and even death. People of African heritage experience keloid formation more frequently. According to reports, severe burn wounds can result in unintended amputations. In the Africa Region, burn injuries are a leading cause of extended hospital admissions, disfigurement, disability, and death (2).

Globally, nearly 800,000 new cases of burns were reported in 2019. These cases were evenly split between men and women, and most of the new cases were centered in the 10 to 19-year-old age range. In addition, burns were responsible for more than 100,000 deaths worldwide in 2019, most of which were confined to children under the age of four (3). In sub-Saharan Africa, it is estimated that 18,000 - 30,000 children suffer burn injuries every year following burn-related accidents. Burn injuries affect children in Tanzania between 25% and 55% of the time, with the majority occurring at home while doing household chores. (4).

As burn care has advanced in recent decades, the survival rate for large pediatric burns has significantly improved. Consequently, there is a growing population of children with major burn scars who require long-term physical and psychosocial

support. To effectively assist these young adult survivors in their recovery beyond acute management, there is a need for a deeper comprehension of their QoL (5).

QoL refers to the capacity to resume a normal lifestyle by effectively fulfilling social roles within the family and wider social sphere. As burn survivors reintegrate into society, we must address their psychosocial needs alongside their physical well-being. However, accomplishing this objective necessitates a clear understanding of the quality of life within our specific patient populations. We must define what constitutes QoL for these individuals, ascertain the expected long-term outcomes, and identify subgroups within the population who may require additional support and attention. By gaining such insights, we can tailor interventions and care strategies to enhance the overall quality of life for burn survivors during their recovery and reintegration process (5–7). Unfortunately, there are no documented studies in our geographic location that aim to assess the quality of life.

QoL can be addressed in many ways, depending on the impairment, health status, or functioning measurements. The World Health Organization Disability Assessment Scale II (WHODAS-II) is one of the most popular and universal tools that may be used to evaluate QoL. This is a general evaluation tool that can be used in clinical settings or to examine population-level health and impairment. WHODAS-II measures the degree of functioning across six domains of life (6).

The evaluation of the WHODAS-II is based on the mean score across each domain of quality of life. Quality of life is assessed through patient-reported responses on a five-point scale, with the options: none, mild, moderate, severe, and extreme/cannot do, corresponding to scores of 1, 2, 3, 4, and 5, respectively. Higher scores indicate a lower quality of life. Therefore, an elevated mean score within any domain reflects poorer functioning or well-being. This scoring methodology was employed to quantify the overall quality of life in the current assessment. In our country, the tool for assessing quality of life after burn injuries is not employed. If this tool were to become routine, proper follow-up for burn patients would be established.

Establishing rehabilitation facilities will be taken into consideration, along with any necessary interventions like psychotherapy, physiotherapy, and others.

Table 1: Six Domains of Life

Domain 1	**Cognition**	Understanding and communicating
Domain 2	**Mobility**	Moving and getting around
Domain 3	**Self care**	attending to one's hygiene, dressing, eating and staying alone
Domain 4	**Getting along**	Interacting with other people
Domain 5	**Life activities**	domestic responsibilities, leisure, work and school
Domain 6	**Participation**	joining in community activities, participating in society.

1.3 Conceptual framework

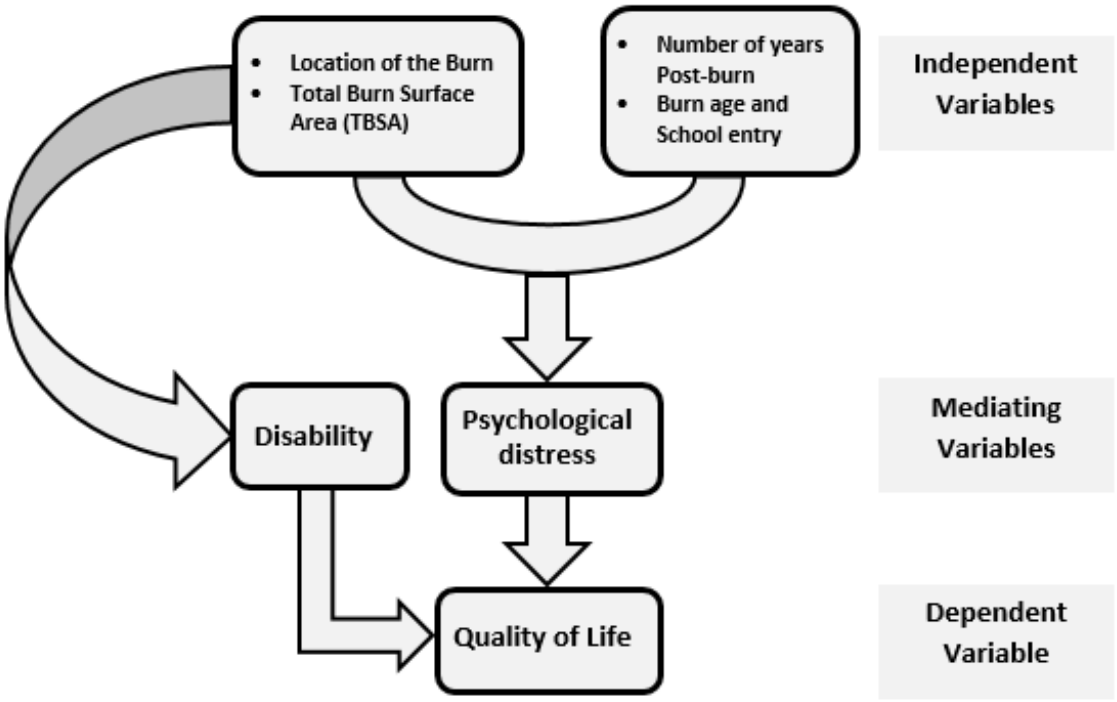


Figure 1: Conceptual framework illustration

Source: Researcher's construct

Potential relationships

a) Location of the burn and TBSA → Disability.

b) Disability → Quality of Life.

c) Location of the burn, TBSA, number of years post-burn, burn age, and school entry → Psychological distress.

d) Psychological distress → Quality of Life.

This conceptual framework, explains how many aspects of burn recovery might impact a person's quality of life. Location of the burn, TBSA, number of years post burn, age of the burn, and enrollment in school are among the elements that function as independent variables. Disability and psychological distress will result from these mediating factors, which will eventually lower the quality of life.

1.4 Rationale of the Study

This study seeks to shed light on the specific domains of functioning and disability that are most affected in this population. Additionally, it aims to explore the potential factors, such as burn severity (TBSA), location of the burn, number of years post-burn, burn age, and demographic variables, that may influence QoL outcomes.

The findings of this research can inform healthcare professionals, policymakers, and rehabilitation specialists about the unique challenges faced by burn survivors at MNH and guide the development of targeted interventions such as psychological evaluation and therapy. Also, this knowledge can help refine and optimize rehabilitation practices at MNH and potentially influence broader rehabilitation protocols and guidelines to improve their QoL.

1.5 Research Questions

1.5.1 Main Research Question

What effect do burn age, burn location, burn severity (TBSA), burn age and school entry have on quality of life in several categories of functioning and disability in WHODAS-II.

1.5.2. Specific research questions

1. What is the impact of the number of years post-burn on QoL.
2. What is the impact of the location of the burn injury on QoL.
3. What is the effect of Total Burn Surface Area (TBSA) on QoL.
4. What is the effect of burn age and school entry on QoL.

1.6 Objectives of the Study

1.6.1. Broad objective

To assess the long-term psychological distress and quality of life among burn survivors using WHODAS-II at MNH.

1.6.2. Specific Objectives

1. To determine the effect of the number of years post-burn on QoL.
2. To determine the effect of the location of the burn on QoL.
3. To determine the effect of Total Burn Surface Area (TBSA) on QoL.
4. To determine the effect of burn age and school entry on QoL.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The number of years post-burn

The impact of the number of years post-burn on various outcomes, including QoL, psychological distress, and functional recovery, has been a subject of research interest in the field of burn injuries. Studies have investigated how individuals' experiences and outcomes change over time after sustaining burn injuries. A study by Kazis et al. (8) examined QoL outcomes in burn survivors up to 5 years post-injury and found improvements in physical and psychological well-being over time. On the other hand, research by Schneider et al. (9) demonstrated that individuals who were further along in their recovery (5-10 years post-burn) showed significant improvements in physical functioning and return to work compared to those in the early stages of recovery (1-4 years post-burn).

Based on the research conducted by Murphy et al. (5), there was no substantial improvement in the QoL observed in the cohort of individuals who are more than 7.5 to 12.5 years post-burn compared to the cohort of individuals who are 2.5 to 7.5 years post-burn. While there were differences between the two groups, these differences did not reach statistical significance. In terms of overall QoL or any particular domains evaluated, the two groups did not significantly differ from one another. The WHODAS II assessment supported the finding that there were no significant differences in QoL between the two groups based on the number of years post-burn. These studies showed that, various burn injury survivors had varying experiences and outcomes over time. However, not all studies have made use of the WHO tool for evaluating quality of life.

2.2 Location of the burn and Total Burn Surface Area (TBSA)

Several studies have investigated how burn location impacts the QoL in BS. For instance, van Baar et al. found that burns to visible areas like the face, hands, and feet are associated with more significant functional limitations and psychosocial distress, ultimately affecting overall QoL. Schneider et al. reported that burns to the extremities, particularly the hands, and feet, lead to greater functional impairments, affecting daily activities and overall QoL. Additionally, Griffiths et al. discovered that burns involving the genital area or requiring amputation result in higher levels of psychological distress, which negatively impacts QoL.(10–12) These studies These studies highlight the importance of considering burn location in understanding the functional, and psychological implications for burn survivors' well-being and QoL.

Studies have shown that larger TBSA is generally associated with poorer QoL outcomes in burn survivors. A study by Orwelius et al. (13) examined the relationship between TBSA and long-term QoL and found that a larger TBSA was associated with increased physical and psychosocial impairments, leading to lower QoL scores. The combined effect of burn location and TBSA on QoL has also been investigated. Research by Simons et al. (14) examined the influence of burn location and TBSA on QoL in pediatric burn survivors and revealed that burns to functionally significant areas (e.g., hands, face) and larger TBSA were associated with more substantial impairments in QoL. The study by Murphy et al. (5) demonstrated that the WHODAS indicated a negative association between increasing TBSA and QOL. The findings revealed that as disability increased, QOL decreased, which aligns with previous research studies on the topic (15,16). The majority of the studies' findings showed that the effects of the burn's location and TBSA were identical. The tool must be used in order to compare the outcomes in our context.

2.3 The burn age and school entry

The impact of burn age on QoL outcomes in BS was explored by Anzarut et al. who found that individuals who experienced burn injuries at a younger age faced greater physical, emotional, and social impairments, negatively affecting their overall QoL. The developmental stage when the burn injury occurs can influence QoL outcomes. Lawrence et al. discovered that children who suffered burns at an early age, such as during infancy or toddlerhood, encountered distinctive challenges related to body image, self-esteem, and social interactions, impacting their QoL throughout childhood and adolescence. These studies emphasize the association between burn age and QoL outcomes, indicating that a younger age at the time of burn injury is associated with significant impairments and unique difficulties in various aspects of life. (17,18)

According to Rosenberg et al.'s investigation into the timing of burn injuries in relation to school entry, those who sustained burns prior to entering school experienced difficulties with socialization, self-esteem, and academic performance, which could have a negative impact on their quality of QoL. Brown et al. discovered that burn survivors who sustained an injury before school entry reported lower social participation and peer support, which can affect their QoL. Additionally, Murphy et al. observed higher disability levels and lower QoL scores in burn survivors injured at age seven or older. Blakeney et al. noted the fear of social rejection in burn survivors due to post-burn disfigurement, which directly affects their ability to socialize after entering school. These studies concluded that burn survivors injured before starting school had the advantage of integrating with their scars, unlike those reintegrating into the school community with new scars. (5,19–21)

Based on the findings of Murphy et al. using WHO tool with strong evidence, it was observed that BS who sustained their injuries at the age of seven or older (after school entry) reported higher levels of disability across all domains, which consequently led to lower QoL scores. These results were in line with the observations made by Blakeney et al., who noted that burn survivors often experience fear of social rejection due to post-burn disfigurement, which directly impacts their ability to socialize after entering school. Consequently, these studies concluded that burn survivors who were injured before entering school had the advantage of already socializing with their scars, as opposed to reintegrating into the school community with new scars. (5,20)

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Study and Design

The study employed a cross-sectional observational study to assess long-term psychological distress and QoL among the burn survivors for a period of 5 months, from September 2023 to March 2024.

3.2 Study Area

MNH, situated in Dar es Salaam, Tanzania, serves as a compelling study area due to its prominent role as a leading healthcare institution in the region. As a tertiary referral hospital, MNH provides specialized medical care, including burn treatment and rehabilitation services, to a diverse population. The hospital's significance as a study area stems from its extensive experience in managing burn cases, making it an ideal setting to explore the impact of burn injuries on QoL. MNH boasts a multidisciplinary approach, with a dedicated team of healthcare professionals, including plastic surgeons, nurses, psychologists, and physiotherapists, who collaboratively address the complex physical, emotional, and social needs of burn survivors. Additionally, MNH's patient population reflects the cultural and socioeconomic diversity prevalent in Tanzania, contributing to the richness of the study area. MNH serves as an exceptional study area due to its expertise in burn care, diverse patient population, and the availability of resources necessary for conducting a comprehensive investigation into the QoL of burn survivors using WHODAS II. This setting offers a unique opportunity to gain insights into the challenges, outcomes, and potential interventions for improving the lives of burn survivors in Tanzania and beyond.

3.3 Study Population

The study population included burn survivors from both pediatric and adult populations, enabling the examination of the varied experiences and difficulties encountered by different age groups. The study encompassed individuals who have encountered burns at different stages in their lives, including childhood, adolescence, and adulthood. We hospitalized the individuals at MNH, provided them with medical treatment, and subsequently discharged them. Currently, they either regularly visit a clinic or have ceased seeking medical attention.

3.4 Sample Size and Selection.

The prevalence of burn injury in Tanzania is 25% to 55%

N = $\frac{Z^2 p(100-p)}{e^2}$

WHERE: Z =level of confidence interval which of 95%=1.96

P = Prevalence of burn injury in Tanzania = **25%**

e = margin of error 10%

N = (1.96) ²x 25(100-25)/10²

N = 72

For this study, a minimum sample size of 72 was required.

Concurrent sampling was the most appropriate and effective sampling technique for this study, as it allowed for the simultaneous enrollment of participants from both exposure groups, ensuring a robust and unbiased assessment of the exposure-outcome relationships.

3.4.1 Inclusion Criteria

Participants who met the inclusion criteria for this study were 12 years of age or older and had experienced a burn injury within the time frame of 3 months to 5 years before enrollment.

3.4.2 Exclusion Criteria

i. Those with cognitive impairments or mental health conditions could potentially impact their ability to provide accurate responses or complete the assessments.

ii. Patients with severe comorbidities or medical conditions that could significantly influence their QoL outcomes, such as advanced cancer or end-stage organ failure.

iii. All individuals who are unable to communicate effectively or understand the study requirements due to language barriers or other communication difficulties.

iv. Individuals with incomplete or missing medical records or insufficient data to assess their burn characteristics and post-burn outcomes.

v. Individuals who are unwilling or unable to participate in the study, provide informed consent, or comply with the study procedures.

3.5 Study Variables

3.5.1 Independent variables

I. Location of the burn: This variable represents the specific body location where the burn injury occurred.

II. Total Burn Surface Area (TBSA): This variable indicates the extent of the body surface area affected by the burn injury.

III. Number of years post-burn: This variable refers to the duration of time that has elapsed since the occurrence of the burn injury. It is typically measured in years.

IV. Burn Age: Burn Age refers to the age at which the burn injury initially occurred. This variable allows for the examination of the influence of age at the time of burn on various outcomes, including quality of life, disability, and psychological well-being.

V. School entry refers to the age at which a burn survivor entered formal education or started attending school. It represents an important developmental milestone in a person's life. This variable allows for the investigation of the impact of burn injuries on socialization and integration into the educational setting.

3.5.2 Dependent variables

Quality of Life (QoL): This variable represents the overall well-being and satisfaction with various aspects of life, including physical, psychological, and social domains, as assessed by the WHODAS II.

3.6 Data Collection Methods

During the data collection phase, we used the WHO tool (WHODAS-II) as the primary structured questionnaire. We evaluated six domains of life, which include cognition, mobility, self-care, interpersonal skills, life activities, and engagement. We also used a separate measure to assess specific attributes that the WHO tool did not address. That was the burn's location, TBSA, burn age, and so forth. The subjects for the study were chosen from the burn clinic patients at MNH as well as from those who were admitted to and released from MNH. We retrieved their information from the records of all patients with burn ages ranging from 3 months to 5 years old.

We conducted the interview in one of the rooms at the NOPD plastic surgery clinic of MNH for individuals who are still receiving follow-up care. The interview focused on individuals who had undergone treatment, made a full recovery, and departed

with scars. The investigator acquired their medical records, established contacts, and extended an invitation for an interview. Therefore, we collected data from both groups for further analysis. We gathered half of the patients from the clinic and the other half from the MNH record department for the data distribution.

3.7 Data Processing and Analysis

We examined the collected information for consistency, correctness, and comprehensiveness. We addressed any missing data or outliers. We properly labeled and organized the data for efficient analysis. We processed and analyzed the data using SPSS version 23. We represented categorical variables with proportions and frequency tables, and continuous variables with the mode, median, standard deviation, and percentage.

We used the student's t-test to compare the groups, taking into account variables like the number of years post-burn, TBSA, sex, burn age, and survey age. Subsequently, the analysis focused on examining the impact of TBSA on QOL. It is critical to establish that sex does not independently affect TBSA before assessing its influence. Following the analysis of sex and TBSA, the study explored the effects of sex, burn age, and survey age.

3.8 Ethical Clearance

The research study underwent the approval process by the institutional review board (IRB) at MUHAS (Muhimbili University of Health and Allied Sciences). Furthermore, the researcher obtained the necessary permissions from the authorities at MNH to collect data. To ensure anonymity, the data collection tool did not record participant names. Since the study only involved the use of assessment tools, the principal investigator ensured the data's confidentiality, ensuring no harm to the participants.

3.9 Limitations and Mitigations

The study faced limitations due to a relatively small sample size, which affected the generalizability of the findings. The study's findings were influenced by selection bias, as participants were recruited from a single hospital. This may have limited the generalizability of the results to other burn survivor populations. The study depended on participant self-reported data, which might have been influenced by social desirability or recollection bias. Participants might have provided responses they perceived as socially favorable, which could have affected the accuracy and reliability of the collected data. To mitigate selection bias, a randomized sampling method was employed. To minimize bias in self-reported data, the study could have utilized well-validated and standardized assessment tools, such as the WHODAS II, which has undergone rigorous testing and has demonstrated reliability and validity. Conducting multivariate analysis would have helped control for confounding variables and provided a more comprehensive understanding of the factors influencing the quality of life in burn survivors.

CHAPTER FOUR

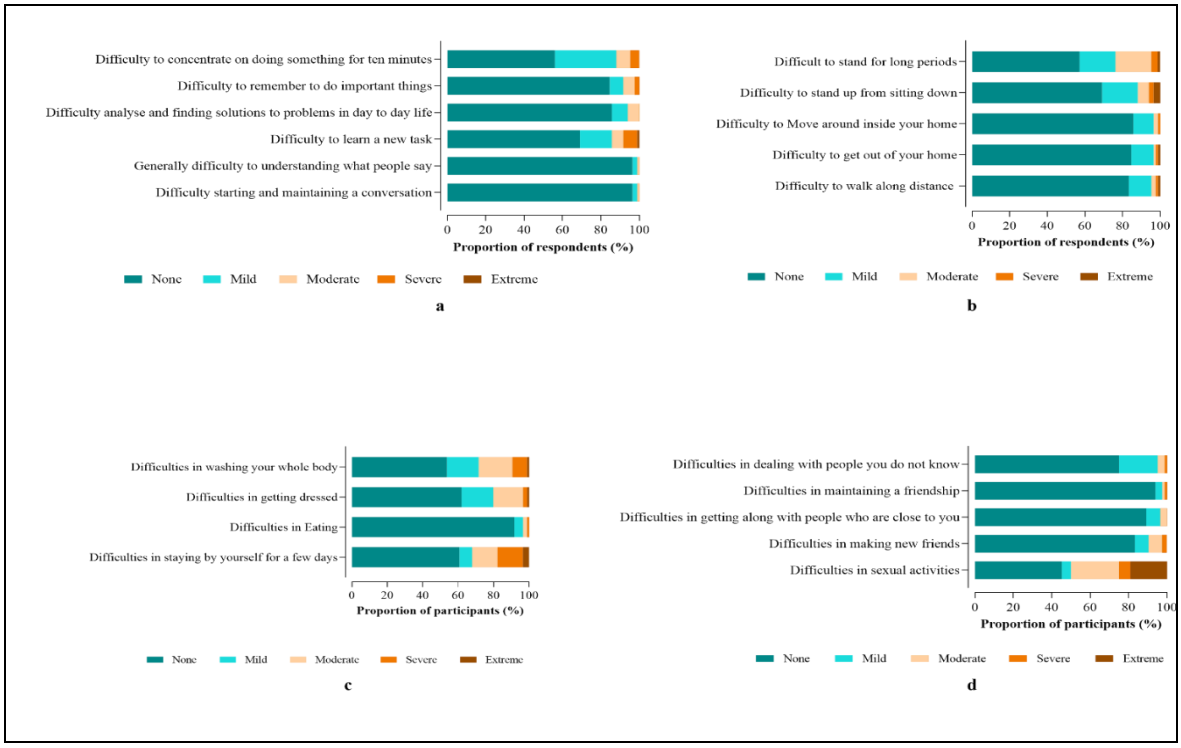
4.0 RESULTS

The study included participants with specific socio-demographic features. There were a total of 84 participants, who were separated into several age categories. The age group of 36-45 years accounted for 27% of the participants, with a median age of 31 and an interquartile range of (22, 40); with the majority of the participants being males (79.8%).

Table 1: Socio - Demographic characteristics of the study participants N = 84

Variable	Frequency (n)	Percent (%)
Age group (years)		
12 – 17	11	13.1
18 – 25	15	17.9
26 – 35	22	26.2
36 – 45	23	27.4
46 – 55	7	8.4
≥56	6	7.1
Median age in years (IQR)	31 (22, 40)	
Sex		
Male	67	79.8
Female	17	20.2
Median years spent at school (range)	7 (0, 17)	
Marital status		
Never married	39	46.4
Currently married	39	46.4
Separated	3	3.6
Widowed	2	2.4
Cohabiting	1	1.2
Working status (Occupation)		
Self-employed (e.g. own business)	30	35.7
Paid work	24	28.6
Student	12	14.3
Unemployed (health reasons)	14	16.7
Retired	3	3.6
Housekeeping / house maker	1	1.2
Living situation at time of interview*		
Independent in community	62	85.7
Assisted living	23	27.4
Hospitalized	1	1.19

The responses on the standardized assessment tool (WHODAS-II), with 36-item questionnaires assessing 6 domains of life were as follows; (chart a) In cognition among the 6 questions asked, in learning a new task, some participants had severe and extremely severe in accomplishing that task. Where the rest of the questions participants had responded majority to none and very few to severe. The bar chart illustrates the responses from the quality of life domains a, b, c, d, e, and f, which include cognition, mobility, self-care, getting along, participation, and life activities.



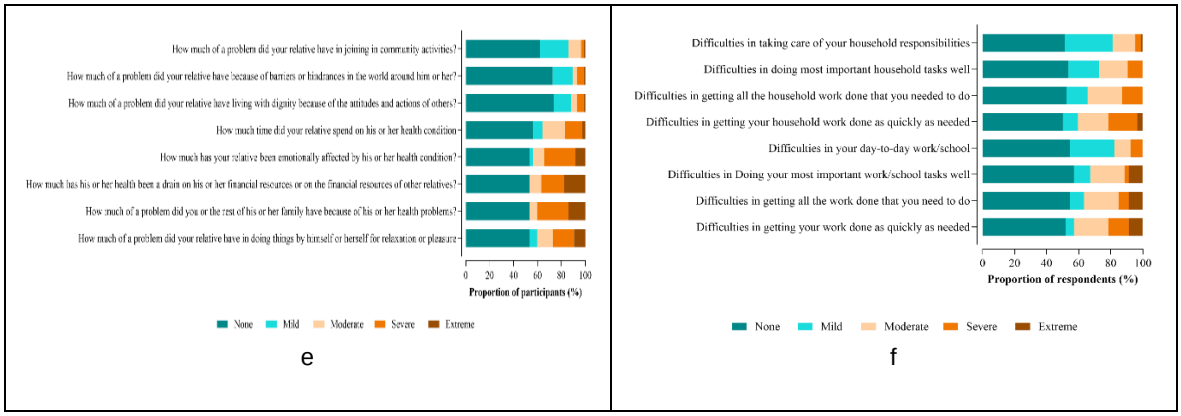


Figure 2: The responses on the standardized assessment tool (WHODAS-II)

Table 2 compares the quality of life scores among the participants with different TBSA, those with less and more than 30%. Results revealed all the participants with ≥ 30 TBSA had higher mean scores in each domain of life which signifies poor quality of life, and it was statistically significant across all domains.

Table 2: Comparisons of quality of life scores among patients with different TBSA. N = 84

	Mean ± SD			
Domain of QoL	**< 30 (n = 55)**	**≥ 30 (n = 29)**	**Test**	**p - value**
Cognition	7.02 ± 2.43	9.03 ± 3.22	t = -2.955, df = 45.195	**0.005**
Mobility	5.89 ± 1.94	8.86 ± 4.28	t = -3.549, df = 34.184	**0.001**
Self-care	5.55 ± 2.82	8.45 ± 3.39	t = -4.180, df = 82	**< 0.001**
Getting along with others	6.40 ± 2.31	9.07 ± 3.57	t = -3.649, df = 40.692	**0.001**
House hold activities	6.20 ± 3.81	10.48 ± 3.52	t = -5.023, df = 82	**< 0.001**
Work or school activities*	9.65 ± 3.70	12.73 ± 4.80	t = -3.162, df = 78	**0.002**
Participation	11.93 ± 7.11	23.76 ± 8.28	t = -6.847, df = 82	**< 0.001**

Key: QoL: Quality of Life

Table 3 compares the quality of life base on the location of the burn, assessment was done base on exposure. 3 groups were assessed, those who got burn on exposed area, whole body and unexposed area. Results reveled that there was no different in of quality of life in terms of exposed area versus unexposed area, in 4 domains (mobility, self care, household and participation) of quality of life. Those burned in exposed and unexposed areas had higher median score which meant poor quality of life.

Table 3: Comparison of quality of life of exposed area over unexposed area

	Body part/area where participants had been burnt			
Domain of quality of life	**Exposed area Median (IQR) n = 40**	**Exposed and unexposed Median (IQR) n = 39**	**Unexposed Median (IQR) n = 5**	**p – value***
Cognition	6.0 (6.0, 7.0)	7.0 (6.0, 9.0)	6.0 (6.0, 8.0)	0.089
Mobility	5.0 (5.0, 6.0)	7.0 (5.0, 9.0)	5.0 (5.0, 7.0)	**0.047**
Self-care	4.0 (4.0, 7.0)	7.0 (4.0, 10.0)	4.0 (4.0, 7.0)	**0.036**
Getting along with other	5.0 (5.0, 7.0)	7.0 (5.0, 10.0)	5.0 (5.0, 8.5)	0.096
Household activities	4.0 (4.0, 9.0)	10.0 (4.0, 12.0)	4.0 (4.0, 12.0)	**0.031**
Work or school activities	8.0 (8.0, 12.0)	10.0 (8.0, 14.0)	10.0 (8.0, 13.5)	0.154
Participation	8.0 (8.0, 19.8)	22.0 (8.0, 27.0)	8.0 (8.0, 21.0)	**0.012**

Key: Exposed area: Area burned – face, head, upper limbs & lower limbs

Unexposed area: - Body

*P-value derived from Kruskal Wallis Test

Table 4, compares the quality of life scores among participants with different burn age < 2.5 (n = 53) and ≥ 2.5 (n = 31). Among 6 domains of quality of life, 4 had positive findings i.e. cognition, self-care, household activities, and participation. In cognition participants with burn age < 2.5 years had a higher mean score (8.36 ± 3.39) compared to those ≥ 2.5 years (6.61 ± 1.02). Also getting along with others < 2.5 years had a higher mean score of quality of life (8.09 ± 3.44) compared to ≥ 2.5 years (6.00 ± 1.59). In participation those with < 2.5 years had a higher mean score of quality of life (18.79 ± 9.67) compared to ≥ 2.5 years (11.26 ± 6.67). All the findings were statistically significantly

Table 4: Comparisons of quality of life scores among participants with different burn age, N = 84.

	Mean ± SD			
Domain of QoL	**< 2.5 (n = 53)**	**≥ 2.5 (n = 31)**	**Test**	**p - value**
Cognition	8.36 ± 3.39	6.61 ± 1.02	t = 3.491, df = 66.665	**0.001**
Mobility	7.25 ± 3.69	6.35 ± 2.30	t = 1.210, df = 82	0.230
Self-care	7.04 ± 3.48	5.71 ± 2.87	t = 1.797, df = 82	0.076
Getting along with others	8.09 ± 3.44	6.00 ± 1.59	t = 3.790, df = 78.722	**< 0.001**
Household activities	8.60 ± 4.42	6.10 ± 3.38	t = 2.921, df = 76.079	**0.005**
Work or school activities*	11.26 ± 4.88	9.63 ± 2.95	t = 1.858, df = 77.981	0.067
Participation	18.79 ± 9.67	11.26 ± 6.67	t = 4.213, df = 79.660	**< 0.001**

Key: QoL: Quality of Life

*N = 80

Table 5, compares the quality of life scores among patients burnt when they were in school and post-school age. The results revealed no difference in the mean score of quality of life across all the domains of life.

Table 5: Comparisons of quality of life scores among patients burnt when were in school and post-school age

	Mean ± SD			
	Burn during school			
Domain of QoL	**Yes (n = 12)**	**No (n = 71)**	**Test**	**p-value**
Cognition	7.83 ± 2.69	7.69 ± 2.95	t = -0.168, df = 15.802	0.869
Mobility	7.58 ± 4.03	6.80 ± 3.16	t = -0.759, df = 81	0.450
Self-care	7.25 ± 3.72	6.45 ± 3.27	t = -0.767, df = 81	0.445
Getting along with others	8.75 ± 4.29	7.08 ± 2.80	t = -1.300, df =12.628	0.217
Household activities	8.33 ± 4.77	7.54 ± 4.17	t = -0.601, df = 81	0.550
Work or school activities*	10.50 ± 3.94	10.69 ± 4.43	t = 0.136, df = 77	0.892
Participation	17.50 ± 10.24	15.87 ± 9.31	t = -0.552, df = 81	0.582

Key: QoL: Quality of Life

*N = 80

4.1 Spearman correlation coefficient;

Correlation of quality of life score vs factors (number of body parts, TBSA, age at the time of burn, and duration from the time of burn. As several body parts burned increases the mean score of quality of life increases across all domains except in cognition and work or school activities which were not significant. When TBSA increases the mean score of of quality of life increases in all domains of life which is very significant (***). Age at the time of burn did not correlate with all domains of quality of life, a P-value ≥ 0.05 was not significant. Duration from the time of burn had a negative correlation with quality of life scores, as time increased the mean score decreased. That was very significant in almost all domains of life.

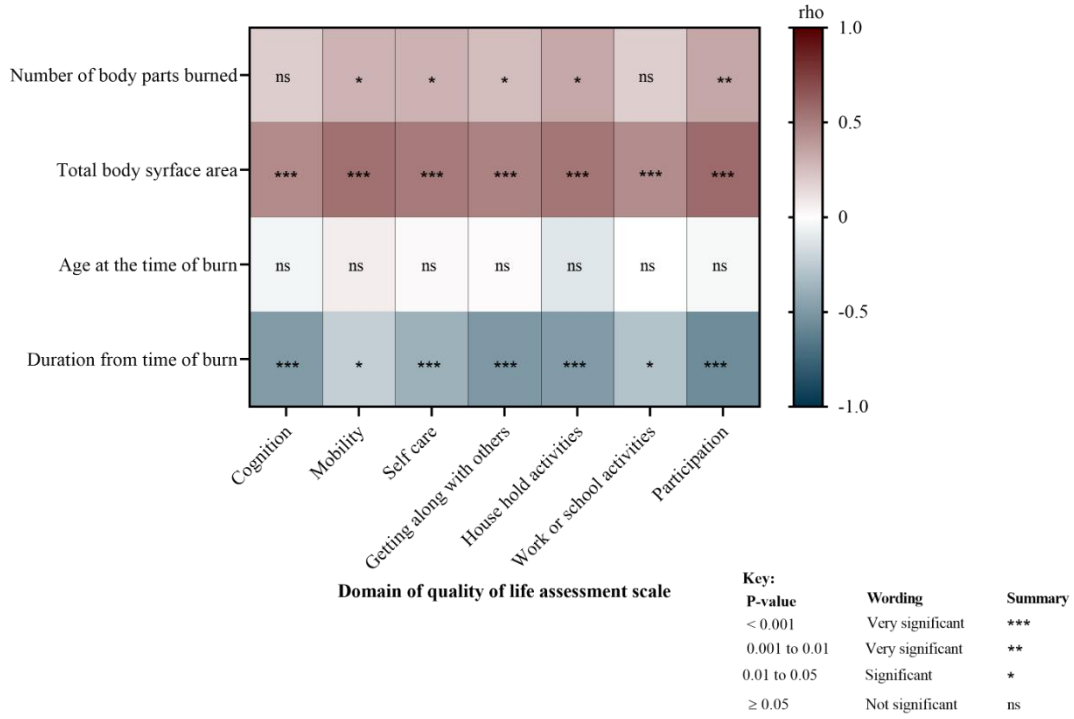


Figure 3: Spearman correlation coefficient of the factors affecting the QoL Scores

CHAPTER FIVE

5.0 DISCUSSION

5.1 The number of years post burn

The impact of the number of years post-burn injury on burn victims has shown improvement in psychological distress and functional recovery over time. Perhaps as time passed after the incident, patients became resilient and got used to their scars and new looks. This was seen in the following domains of the quality of life: cognition, getting along with others, household activities, and participation. Also, another possible reason for the improvement of the general condition is the rehabilitation post-burn, such as physiotherapy, which leads to good functional outcomes for the patients. Kazis et al. reported similar findings in Boston, USA, where they examined the quality of life outcome in burn survivors up to 5 years post-injury and found improvements in physical and psychological well-being over time.(22) Schneider et al.'s research revealed significant improvements in physical functioning and return to work among individuals further along in their recovery (5–10 years post-burn) compared to those in the early stages of recovery (1-4 years post-burn).(11,23) However, a study conducted by Murphy found no significant improvement in QoL in a cohort of individuals who were burned for 2.5–7.5 years compared to 7.5–12.5 years. The differences were not statistically significant.(23)

5.2 Location of the burn

In this study, we found that participants with burned exposed and unexposed areas had a poorer quality of life in comparison to those burned either exposed or unexposed. Individuals who sustained burns on both exposed and unexposed areas exhibited a diminished quality of life, as evidenced by impairments in mobility, self-care, household activities, and social participation.This could be due to the large area affected. Researchers have also investigated the combined effect of burn location and TBSA on QoL. In pediatric burn survivors, Simons et al. investigated

the influence of burn location and TBSA on QoL and found that burns to functionally significant areas (e.g., hands, face) and larger TBSA were associated with more substantial impairments in QoL.(24)

However other studies done in Canada and the USA revealed that the participants burned in exposed areas for instance face and extremities was associated with poor quality of life.(10–12) The discrepancies in this study compared to other studies could be explained because the participants had multiple areas of burns, which made it difficult to do assessments on the specific locations. Another possible reason is that the concurrent studies had larger sample sizes compared to ours.

5.3 Total burn surface area

The effect of the total burn surface area demonstrated that increased TBSA ≥ 30 in this study leads to poor quality of life compared to those less than 30. Victims with a larger burn surface area are more likely to suffer post-burn complications such as disfigurement, contractures, and sometimes limb loss. This could potentially explain why the larger the burn surface, the lower the quality of life. The study revealed this, as it affected all domains of quality of life. Other researchers have also confirmed this finding. A study by Orwelius et al. examined the relationship between TBSA and long-term QoL and found that a larger TBSA was associated with increased physical and psychosocial impairments, leading to lower QoL scores.(25) Also study done by Murphy confirmed similar findings, the larger the surface the poor the quality of life.(23)

5.4 To determine the effects of burn age and school entry on quality of life

In this study, we compared the quality of life scores among patients burned when they were in school and post-school age. The results revealed no difference in the mean score of quality of life across all the domains of life. Rosenburg conducted an assessment of children before they started school and discovered that those who

experienced burns before starting school had challenges in socializing, low self-esteem, and poor academic performance, which ultimately resulted in a diminished quality of life.(27) Brown et al., who studied a comparable age group, found that the victims had reduced social activity and peer support. (28) Blakeney et al. reported divergent results about the dread of social rejection in burn survivors caused by post-burn injury, which subsequently hampers their socialization upon entering school.(29)

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

This study has shown that burn survivors are still facing challenges in different aspects of their lives. Over time, people's quality of life improves as they develop resilience and adjust to their appearance. The study has shown that some victims face social and psychological consequences, particularly when multiple burn sites with large surface areas exist.

The findings of this study have demonstrated that burn victims exist within our communities, and they encounter challenges at every stage of their lives, from childhood to adulthood. They experience both social and physical harm throughout their lives. Therefore, as health care providers, legislators, and rehabilitation specialists, we can strategize and direct the progress of specific therapies for the affected individuals, such as psychological evaluation and physiotherapy. Moreover, it is important to carry out the study on a large scale across Tanzania in order to better understand the experiences these victims face. This would enhance the credibility of the findings, exerting a greater influence on policymakers to promote the process of rehabilitating and expediting the reintegration of these individuals into society as productive members.

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APPENDICES

Appendix IA: Data collection tool I

WHODAS 2.0
WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

This questionnaire contains the interviewer-administered 36-item version of WHODAS 2.0.

Instructions to the interviewer are written in bold and italics – do not read these aloud.

Text for the respondent to hear is written in

standard print in blue.

Read this text aloud.

Section 1 Face sheet

Complete items F1–F5 before starting each interview				
F1	Respondent identity number			
F2	Interviewer identity number			
F3	Assessment time point (1, 2, etc.)			
F4	Interview date	_____ day	_____ month	_____ year
F5	Living situation at time of interview (circle only one)	Independent in community		1
		Assisted living		2
		Hospitalized		3

WHODAS 2.0

WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

Section 2 Demographic and background information

This interview has been developed by the World Health Organization (WHO) to better understand the difficulties people may have due to their health conditions. The information that you provide in this interview is confidential and will be used only for research. The interview will take 15–20 minutes to complete.

For respondents from the general population (not the clinical population) say:

Even if you are healthy and have no difficulties, I need to ask all of the questions so that the survey is complete.

I will start with some background questions.

A1	***Record sex as observed***	Female	1
		Male	2
A2	How old are you now?	_____ years	
A3	How many years in all did you spend studying in school, college or university?	_____ years	
A4	What is your current marital status? ***(Select the single best option)***	Never married	1
		Currently married	2
		Separated	3
		Divorced	4
		Widowed	5
		Cohabiting	6
A5	Which describes your main work status best? ***(Select the single best option)***	Paid work	1
		Self employed, such as own your business or farming	2
		Non-paid work, such as volunteer or charity	3
		Student	4
		Keeping house/ homemaker	5
		Retired	6
		Unemployed (health reasons)	7
		Unemployed (other reasons)	8
		Other (specify)_____ _____	9

WHODAS 2.0
WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

Section 4 Domain reviews

Domain 1 Cognition

I am now going to ask some questions about understanding and communicating.

Show flashcards #1 and #2 to respondent

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D1.1	Concentrating on doing something for ten minutes?	1	2	3	4	5
D1.2	Remembering to do important things?	1	2	3	4	5
D1.3	Analysing and finding solutions to problems in day-to-day life?	1	2	3	4	5
D1.4	Learning a new task, for example, learning how to get to a new place?	1	2	3	4	5
D1.5	Generally understanding what people say?	1	2	3	4	5
D1.6	Starting and maintaining a conversation?	1	2	3	4	5

Domain 2 Mobility

I am now going to ask you about difficulties in getting around.

Show flashcards #1 and #2

In the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D2.1	Standing for long periods such as 30 minutes?	1	2	3	4	5
D2.2	Standing up from sitting down?	1	2	3	4	5
D2.3	Moving around inside your home?	1	2	3	4	5
D2.4	Getting out of your home?	1	2	3	4	5
D2.5	Walking a long distance such as a kilometre [or equivalent]?	1	2	3	4	5

WHODAS 2.0
WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

Domain 5 Life activities

5(1) Household activities

I am now going to ask you about activities involved in maintaining your household, and in caring for the people who you live with or are close to. These activities include cooking, cleaning, shopping, caring for others and caring for your belongings.

Show flashcards #1 and #2

Because of your health condition, in the past 30 days, how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D5.1	Taking care of your household responsibilities?	1	2	3	4	5
D5.2	Doing your most important household tasks well?	1	2	3	4	5
D5.3	Getting all the household work done that you needed to do?	1	2	3	4	5
D5.4	Getting your household work done as quickly as needed?	1	2	3	4	5

If any of the responses to D5.2–D5.5 are rated greater than none (coded as "1"), ask:

D5.01	In the past 30 days, on how many days did you reduce or completely miss household work because of your health condition?	***Record number of days ____***

If respondent works (paid, non-paid, self-employed) or goes to school, complete questions D5.5–D5.10 on the next page. Otherwise, skip to D6.1 on the following page.

WHODAS 2.0
WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

5(2) Work or school activities

Now I will ask some questions about your work or school activities.

Show flashcards #1 and #2

Because of your health condition, in the past 30 days how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme or cannot do
D5.5	Your day-to-day work/school?	1	2	3	4	5
D5.6	Doing your most important work/school tasks well?	1	2	3	4	5
D5.7	Getting all the work done that you need to do?	1	2	3	4	5
D5.8	Getting your work done as quickly as needed?	1	2	3	4	5
D5.9	Have you had to work at a lower level because of a health condition?				No	1
					Yes	2
D5.10	Did you earn less money as the result of a health condition?				No	1
					Yes	2

If any of D5.5–D5.8 are rated greater than none (coded as "1"), ask:

D5.02	In the past 30 days, on how many days did you miss work for half a day or more because of your health condition?	***Record number of days ____***

Please continue to next page...

WHODAS 2.0

WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36
Interview

Domain 6 Participation

Now, I am going to ask you about your participation in society and the impact of your health problems on you and your family. Some of these questions may involve problems that go beyond the past 30 days, however in answering, please focus on the past 30 days. Again, I remind you to answer these questions while thinking about health problems: physical, mental or emotional, alcohol or drug related.

Show flashcards #1 and #2

In the past 30 days:		None	Mild	Moderate	Severe	Extreme or cannot do
D6.1	How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	1	2	3	4	5
D6.2	How much of a problem did you have because of barriers or hindrances in the world around you?	1	2	3	4	5
D6.3	How much of a problem did you have living with dignity because of the attitudes and actions of others?	1	2	3	4	5
D6.4	How much time did you spend on your health condition or its consequences?	1	2	3	4	5
D6.5	How much have you been emotionally affected by your health condition?	1	2	3	4	5
D6.6	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5
D6.7	How much of a problem did your family have because of your health problems?	1	2	3	4	5
D6.8	How much of a problem did you have in doing things by yourself for relaxation or pleasure?	1	2	3	4	5

Appendix IB: Data collection tool I – Swahili version

WHODAS 2.0

SHIRIKA LA AFYA DUNIANI RATIBA YA TATHMINI YA ULEMAVU 2.0

Sehemu ya 1 Karatasi ya Utambulisho

Kamilisha vipengele F1–F5 kabla ya kuanza kila mahojiano			
F1	Nambari ya utambulisho wa mhojiwa		
F2	Nambari ya utambulisho wa msaili		
F3	Pointi ya muda wa tathmini (1, 2 n.k)		
F4	Tarehe ya mahojiano		
F5	Hali ya maisha wakati wa mahojiano (zungushia moja tu)	Kujitegemea katika jamii	1
		Kuishi kwa kusaidiwa	2
		Kuishi kwa kukarimmiwa	3

Sehemu ya 2 Maelezo ya usuli na idadi ya watu

Usaili huu umeandaliwa na Shirika la Afya Duniani (WHO) ili kuelewa ugumu wanaoweza kupata watu kutokana na hali zao za kiafya. Taarifa utakazozitoa katika usaili huu ni za siri na zitatumika kwa ajili ya utafiti tu. Usaili utatumia kati ya dakika 15 – 20

Kwa wajibu hojaji kutoka kwenye wango la jumla (siyo wango la kitabibu) sema:

Hata kama wewe ni mzima wa afya na huna matatizo, ninahitaji kuuliza maswali yote ili uchunguzi uwe kamili**.**

Nitaanza na maswali ya usuli

A1	Rekodi jinsia kama inavyoonekana	Kike	1
		Kiume	2
A2	Una umri gani?	Miaka ….	
A3	Je, ulitumia miaka mingapi kusoma shule, au chuo kikuu?	Miaka ….	
A4	Je, hali yako ya ndoa kwa sasa ikoje?	Sijawahi kuoa/ kuolewa	1
	(Chagua jibu bora zaidi)	Nimeoa/ nimeolewa	2
		Tumetengana	3
		Tumetalikiana	4
		Mjane	5
		Tunaishi pamoja	6
A5	Ni ipi inaelezea hali yako kuu ya kazi vizuri zaidi?	Kazi ya kulipwa	1
		Kujiajiri, kama vile	2

	(Chagua jibu bora zaidi)	kumiliki biashara yako au kilimo	
		Kazi zisizo za malipo, kama vile kujitolea au hisani	3
		Mwanafunzi	4
		Mtunzaji wa nyumba	5
		Mstaafu	6
		Simwajiriwa(kwaababu za kiafya)	7
		Simwajiriwa (sababu nyingine)	8
		Zinginezo(taja)	9

Sehemu ya 3 Dibaji

Zungumza na mhojiwa:

Mahojiano ni kuhusu matatizo ambayo watu wanayo kwa sababu ya hali za afya.

Toa kadibodi nambari 1 kwa mhojiwa na useme:

Kwa hali ya afya ninamaanisha magonjwa au maumivu, au matatizo mengine ya kiafya ambayo yanaweza kuwa ya muda mfupi au ya kudumu; majeraha; matatizo ya akili au kihisia; na matatizo ya pombe au madawa ya kulevya.

Kumbuka kuyabaini matatizo yako yote ya kiafya unapojibu maswali. Ninapokuuliza kuhusu ugumu katika kufanya shughuli fikiria kuhusu..

Onyesha kadi nambari 1 na ueleze kuwa "ugumu wa shughuli" inamaanisha:

1. Kuongezeka kwa juhudi
2. kutokuwa sawa au maumivu
3. Upole
4. Mabadiliko katika jinsi unavyojishughulisha

Zungumza na mhojiwa:

Wakati wa kujibu, ningependa ufikirie nyuma katika siku 30 zilizopita. Ningependa pia ujibu maswali haya ukifikiria ni ugumu gani umekuwa nao, kwa wastani, katika siku 30 zilizopita, wakati kufanya shughuli kama ilivyo kawaida.

Toa kadibodi namba 2 kwa mhojiwa na useme:

Tumia kipimo hiki unapojibu.

Soma kiwango kwa sauti:

Hakuna, kidogo, wastani, kali, kali sana au huwezi kufanya.

Hakikisha kuwa mhojiwa anaweza kuona kadibodi #1 na #2 kwa urahisi katika kipindi chote cha mahojiano/ usaili

Sehemu ya 4 Mapitio ya domaini

Domaini 1 Utambuzi

Sasa nitauliza maswali kuhusu kuelewa na kuwasiliana.

Katika siku 30 zilizopita, ulikuwa na ugumu kiasi gani katika:		Hakuna	kidogo	wastani	kali	Kali sana au huwezi kufanya
D1.1	Uwezo wa kufanya kitu kwa dakika kumi?	1	2	3	4	5
D1.2	Unakumbuka kufanya mambo muhimu?	1	2	3	4	5
D1.3	Kuchambua na kutafuta ufumbuzi wa matatizo katika maisha ya kila siku?	1	2	3	4	5
D1.4	Kujifunza kitu kipya, kwa mfano, kujifunza jinsi ya kufika mahali pa pya?	1	2	3	4	5
D1.5	Uelewekaji wa jumla, kinachoongelewa na watu	1	2	3	4	5
D1.6	Kuanza na kudumisha mazungumzo?	1	2	3	4	5

Domaini 2 Kujongea

Sasa nitauliza kuhusu ugumu katika kujongea

In the past 30 days, how much difficulty did you have in:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D2.1	Kusimama kwa muda mrefu kama dakika 30?	1	2	3	4	5
D2.2	Kusimama kutoka kukaa chini?	1	2	3	4	5
D2.3	Kuzunguka ndani ya nyumba yako?	1	2	3	4	5
D2.4	Unatoka nje ya nyumba yako?	1	2	3	4	5
D2.5	Kutembea umbali mrefu kama vile kilomita[au mlinganiko wake]?	1	2	3	4	5

Domaini ya 3 Kujitunza

Sasa nitakuuliza kuhusu ugumu wa kujitunza wewe mwenyewe.

Katika siku 30 zilizopita, ulikuwa na ugumu kiasi gani katika:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D3.1	Kuoga mwili wako wote?	1	2	3	4	5
D3.2	Kuvaa nguo?	1	2	3	4	5
D3.3	Kula?	1	2	3	4	5
D3.4	Kukaa peke yao kwa siku chache?	1	2	3	4	5

Domain 4 Kuishi na watu

Sasa nitakuuliza kuhusu ugumu wa kuishi na watu. Tafadhali kumbuka kuwa ninauliza tu juu ya ugumu ambao unatokana na matatizo ya kiafya. Hapa namaanisha magonjwa, majeraha, matatizo ya kiakili au kihisia na matatizo yatokanayo na pombe au madawa ya kulevya

Katika siku 30 zilizopita, ulikuwa na ugumu kiasi gani katika:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D4.1	Kujishughulisha na watu usiowajua?	1	2	3	4	5
D4.2	Kudumisha urafiki?	1	2	3	4	5
D4.3	kushirikiana na watu walio karibu nawe?	1	2	3	4	5
D4.4	Kupata marafiki wapya?	1	2	3	4	5
D4.5	Masuala ya kufanya mapenzi	1	2	3	4	5

Domaini ya 5 Shughuli za Kimaisha

5(1) Shughuli za nyumbani

Sasa nitakuuliza kuhusu shughuli zinazohusika katika kutunza kaya yako, na katika kutunza watu unaoishi nao au walio karibu nao. Shughuli hizi ni pamoja na kupika, kusafisha, kufanya ununuzi, kutunza wengine na kutunza mali zako.

Kwa sababu ya hali ya afya yako, katika siku 30 zilizopita, ulikuwa na ugumu kiasi gani katika:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D5.1	Kushughulikia majukumu yako ya nyumbani?	1	2	3	4	5
D5.2	Kufanya vizuri kazi zako muhimu zaidi za nyumbani?	1	2	3	4	5
D5.3	Kukamilisha kazi zote za nyumbani ulizohitaji kufanya?	1	2	3	4	5
D5.4	Kufanya kazi yako ya nyumbani haraka iwezekanavyo?	1	2	3	4	5

Iwapo majibu yoyote ya D5.2–D5.5 yamekadiriwa kuwa makubwa kuliko hakuna (yamesimbwa kama “1”), uliza:

D5.01	Katika siku 30 zilizopita, ni siku ngapi ulipunguza au kukosa kabisa kazi ya nyumbani kwa sababu ya hali yako ya kiafya?	***Rekodi idadi ya siku*** _____

Ikiwa wasailiwa wanafanya kazi (kulipwa, isiyo ya kulipwa, ajira binafsi) au wanafunzi, jaza maswali D5.5- D5.10 katika ukurasa unaofuata. Vinginevyo, rukia kwenye D6.1 kwenye ukurasa unaofuata

5(2) Shughuli za kazi au shuleni

Sasa nitauliza baadhi ya maswali kuhusu kazi yako au shughuli za shule

Kwa sababu ya hali yako ya afya, katika siku 30 zilizopita ulikuwa na ugumu kiasi gani katika:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D5.5	Kazi/shule yako ya kila siku?	1	2	3	4	5
D5.6	Kufanya kazi/kazi zako muhimu zaidi za shule vizuri?	1	2	3	4	5
D5.7	Kukamilisha kazi yote unayohitaji kufanya?	1	2	3	4	5
D5.8	Kufanya kazi yako haraka iwezekanavyo?	1	2	3	4	5
D5.9	Umelazimika kufanya kazi kwa kiwango cha chini kwa sababu ya hali ya kiafya?				Hapana	1
					Ndio	2
D5.10	Je, ulipata pesa kidogo kutokana na hali ya afya?				Hapana	1
					Ndio	2

Ikiwa yoyote kati ya D5.5–D5.8 imekadiriwa kuwa kubwa kuliko hakuna (iliyopewa msimbo kama “1”), uliza:

D5.02	Katika siku 30 zilizopita, ni siku ngapi ulikosa kazi kwa nusu siku au zaidi kwa sababu ya hali yako ya afya?	***Rekodi idadi ya siku*** _____

Domaini ya 6 Kushiriki

Sasa, nitakuuliza kuhusu ushiriki wako katika jamii na athari za matatizo yako ya kiafya kwako na kwa familia yako. Baadhi ya maswali haya yanaweza kuhusisha matatizo yanayokwenda zaidi ya 30 zilizopita, hata hivyo katika kujibu, tafadhali zingatia siku 30 zilizopita. Kwa mara nyingine, nakukumbusha kujibu maswali haya huku ukifikiria kuhusu matatizo ya afya: kimwili, kiakili au kihisia, pombe au madawa ya kulevya.

Katika siku 30 zilizopita:		Hakuna	Kidogo	Wastani	Kali	Kali sana au huwezi kufanya
D6.1	Je, ulikuwa na tatizo kiasi gani la kujiunga katika shughuli za jumuiya (kwa mfano, sherehe, shughuli za kidini au nyinginezo) kwa njia sawa na mtu mwingine yeyote anaweza kufanya?	1	2	3	4	5
D6.2	Je, ulikuwa na shida kiasi gani kwa sababu ya vizuizi au vikwazo katika ulimwengu unaokuzunguka?	1	2	3	4	5
D6.3	Je, ulikuwa na tatizo kiasi gani la kuishi kwa utu wako kwa sababu ya mitazamo na matendo ya wengine?	1	2	3	4	5
D6.4	Je, ulitumia muda gani kwa hali yako ya afya au matokeo yake?	1	2	3	4	5

D6.5	Je, umeathirika kwa kiasi gani kihisia na hali yako ya afya?	1	2	3	4	5
D6.6	Je, ni kwa kiasi gani afya yako imekuwa ni kikwazo cha rasilimali za kifedha kwako au familia yako?	1	2	3	4	5
D6.7	Familia yako ilikuwa na shida ngapi kwa sababu ya shida zako za kiafya?	1	2	3	4	5
D6.8	Je, ulikuwa na tatizo kiasi gani katika kufanya mambo peke yako kwa ajili ya kujistarehesha au kujiburudisha?	1	2	3	4	5

H1	Matatizo yaliyopo?	***Rekodi idadi ya siku*** _____
H2	Katika siku 30 zilizopita, kwa siku ngapi hukuweza kabisa kufanya shughuli au kazi yako ya kawaida kwa sababu ya hali yoyote ya afya Kwa ujumla, katika siku 30 zilizopita, hizi zilikuwa siku ngapi?	***Rekodi idadi ya siku*** _____
H3	Katika siku 30 zilizopita, bila kuhesabu siku ambazo hukuweza kabisa, ni kwa siku ngapi ulipunguza au kupunguza shughuli zako za kawaida au kazi kwa sababu ya hali yoyote ya afya?	***Rekodi idadi ya siku*** _____

Hii inahitimisha mahojiano. Asante kwa kushiriki.

Appendix IIA: Supplementary Data Collection Tool II

1. Participant No.	
2. Participant File No	
3. Location of the burn	
4. Total burn surface area (TBSA)	
5. Age at the time of burn	
6. Burn age	
7. Burn prior to school entry.	
8. Burn during school.	
9. Burn at the transition to adulthood.	

Note:

If the participant is an adult, No 7, 8 and 9 = N/A

Appendix IIB: Supplementary Data Collection Tool II – Swahili version

1. Nambari ya mshiriki	
2. Faili namba ya mshiriki	
3. Sehemu uliongua	
4. Jumla ya eneo ulilounguа	
5. Umri wakati wa kuungua	
6. Umri wa kuungua	
7. kuungua kabla ya kuingia shuleni	
8. Kuungua moto wakati wa shule	
9. Kuungua wakati wa mpito hadi utuuzima	

Appendix IIIA: Informed Consent Form - Adult (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS)

DIRECTORATE OF RESEARCH AND PUBLICATION, MUHAS

Identification number ……...

Greetings!

My name is Dr. **Kassim Bahsan** from Muhimbili University of Health and Allied Sciences(MUHAS), a postgraduate student pursuing a Master of Medicine in General Surgery, I am conducting research Titled Quality of life in burn survivors using world health organization disability tool assessment scale II (WHODAS-II)

The purpose of the study: is to determine long term psychological distress and Quality of Life in burn survivors using the world health organization disability tool assessment scale II WHODAS-II

Participants and Methods: if you agree to be part of this study, your data will be collected in terms of your demographic information, number of years post burn, total burn surface area and location of the burn. Finally, using the proposed tools, analysis will be done.

Confidentiality: No one will be able to correlate your participation based on the information you have provided, and all information collected from the participant will be kept private. The information gathered won't be accessible to anyone who isn't authorized.

Benefits: If you consent to take part in this study, the information that is gathered will serve to show how burn survivors' quality of life is. Knowing this will aid policymakers in re-evaluating the situation of these victims so that various

management techniques can be employed to aid individuals like you in reintegrating into society as fully functional members.

Potential risks: There is no risk involved in participating in this study, and no harm to the participants is anticipated. Since its method entails using a tool from the World Health Organization, certain data will be gathered from the system or file.

Costs: For your participation in the study, there won't be any fees demanded of you.

Right to withdraw and alternatives: It is entirely up to you whether or not to take part in this study. You have the option to end your participation at any point throughout the interview or even after it has concluded. You won't be subject to any fines or benefit losses.

Contacts: You can get in touch with the researcher if you have any queries regarding the study, **Dr. Kassim Bahsan**, the Supervisors **Dr. Ramadhan Khamis and Dr. Muhamba** of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es salaam or the Chairperson of the Senate Research and Publication Committee P. O. Box 65001, Dar es Salaam, Tel. +255222152489, Dar es Salaam. Mob. No. of the principal investigator +255 62 107 6771

Participation Agreement

I …… I have read and understood the contents of this form, and my questions have been answered. I agree to participate in this study

Signature of participant ……... Date …….

Sign of investigator ……... Date …….

Appendix IIIB: Fomu ya Ridhaa (Toleo la Kiswahili)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI

Namba ya utambulisho .....

Habari!

Jina langu ni **Dr Kassim Bahsan**, kutoka chuo kikuu cha afya na sayansi shirikishi Muhimbili. Mwanafunzi wa shahada ya uzamivu katika fani ya upasuaji, ninafanya utafiti unaohusu kuangalia ubora wa Maisha baada ya kuathirika na kuungua na moto kwa kutumia chombo cha shirika la afya duniani WHODAS-II.

Dhumuni la utafiti: kutafuta athari ya muda mrefu ya kisaikolojia na Ubora wa Maisha kwa waathirika walioungua kwa kutumia kipimo cha tathmini ya zana ya ulemavu ya shirika la afya duniani II WHODAS-II

Jinsi ya kushiriki: Ikiwa unakubali kuwa sehemu ya utafiti huu, taarifa zako zitakusanywa kulingana na ubini wako, idadi ya miaka baada ya kuungua, eneo zima ulilounguа. Mwisho, kwa kutumia zana iliopendekezwa, uchambuzi utafanywa.

Usiri: Hakuna mtu atakayeweza kufaham ushirika wako kulingana na taarifa ulizozitoa, na taarifa zote zilizokusanywa kutoka kwa mshiriki zitakuwa siri. Taarifa hizo hatapewa mtu yeyote ambaye hajaidhinishwa na mshiriki.

Faida: Ukikubali kushiriki katika utafiti huu, maelezo ambayo yatakusanywa yatasaidia kuonyesha jinsi hali ya maisha ya waathirika wa kuungua moto. Kujua hili li tasaidia watunga sera katika kutathmini upya hali ya waathirika hawa ili usimamizi na mbinu mbalimbali zinaweza kutumika kusaidia watu binafsi kama wewe kurudi tena katika jamii ukiwa unajiweza kikamilifu.

Athari: Hakuna madhara yoyote yanayotarajiwa kutokea kwa mshiriki wa utafiti huu, kwakuwa taarifa za mshiriki zitakusanywa kwa kutumia zana kutoka Shirika la Afya duniani na baadhi ya tarifa zitakusanywa kutoka kwenye mfumo au faili.

Gharama: Hakuna malipo yatakayohitajika kutoka kwako kama ada ya kushiriki katika utafiti huu.

Haki ya kujitoa katika utafiti. : Una uamuzi wa kushiriki au kutoshiriki katika utafiti huu. Una hiari ya kusitisha ushiriki wako wakati wowote, kipindi cha mahojiano au hata baada ya kukamilika. Hakuna adhabu au hasara utakayoipata kwa ushiriki wako katika utafiti huu**.**

Mawasiliano: Ikiwa una maswali yoyote kuhusu utafiti huu, unaweza kuwasiliana na mtafiti Dk. Kassim Bahsan au wasimamizi wake Dk Ramadhan na Dk. Muhamba wa Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, P. O. Box 65001, Dar es salaam au Mwenyekiti wa kamati ya seneti ya utafiti na uchapishaji P. O. Box 65001, Dar es Salaam, Simu +255222152489, Dar es Salaam.

Namba ya simu ya mkononi ya mpelelezi mkuu +255 62 107 6771

Makubaliano ya mshiriki: Mimi …….. nimesoma na kuelewa yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Nimekubali kushiriki katika uchunguzi huu.

Sahihi ya mshiriki ……. Tarehe……

Sahihi ya mtafiti Mkuu……. Tarehe……..

Appendix IVA: Informed Consent Fort – Pediatric (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS)

DIRECTORATE OF RESEARCH AND PUBLICATION, MUHAS

Identification number ……...

Greetings!

My name is Dr. **Kassim Bahsan** from Muhimbili University of Health and Allied Sciences(MUHAS), a postgraduate student pursuing a Master of Medicine in General Surgery, I'm conducting research Titled Quality of Life in burn survivors using world health organization disability tool assessment scale II (WHODAS-II)

The purpose of the study: To determine long-term psychological distress and Quality of Life in burn survivors using the world health organization disability tool assessment scale II WHODAS-II

Participants and Methods: If you consent to participate in this study, we will gather data relevant to your child's demographics, time elapsed since the burn incident, the extent of the burn area, and the specific site of the burn. Ultimately, the analysis will be conducted utilizing the provided methodologies. Your agreement for your child to take part in this research is greatly appreciated.

Confidentiality: No one will be able to correlate your child's participation based on the information you have provided, and all information collected from the participant will be kept private. The information gathered won't be accessible to anybody not authorized.

Benefits: If you consent for your child to participate in this study, the information gathered will show how burn survivors' quality of life is. Knowing this will aid policymakers in re-evaluating the situation of these victims so that various

management techniques can be employed to aid individuals like your child in reintegrating into society as fully functional member.

Potential risks: There is no risk involved in participating in this study, and no harm to the participants is anticipated. Since its method entails using a tool from the World Health Organization and certain data will be gathered from the system or the file.

Costs: For the participation of your child in this study, there won't be any fees demanded of you.

Right to withdraw and alternatives: It is entirely up to you whether or not your child to take part in this study. You have the option to end his/her participation at any point throughout the interview or even after it has concluded. You won't be subject to any fines or benefit losses.

Contacts: You can get in touch with the researcher if you have any queries regarding the study, **Dr. Kassim Bahsan,** or the Supervisors **Dr. Ramadhan Khamis and Dr. Muhamba** of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es salaam or the Chairperson of senate research and publication committee P. O. Box 65001, Dar es Salaam, Tel +255222152489, Dar es Salaam. Mob. No. of the principal investigator +255 62 107 6771

Participation Agreement

I …… I have read and understood the contents of this form, and my questions have been answered. I agree with the participation of my child in this study

Signature of Guardian or parent:…….. Date …….

Sign of investigator: ……... Date …….

Appendix IVB: Fomu ya Ridhaa kwa mtoto (Toleo la Kiswahili)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI

Namba ya utambulisho .....

Habari!

Jina langu ni **Dr Kassim Bahsan**, kutoka chuo kikuu cha afya na sayansi shirikishi Muhimbili. Mwanafunzi wa shahada ya uzamivu katika fani ya upasuaji, ninafanya utafiti unaohusu kuangalia ubora wa Maisha baada ya kuathirika na kuungua na moto kwa kutumia chombo cha shirika la afya duniani WHODAS-II.

Dhumuni la utafiti: kutafuta athari ya muda mrefu ya kisaikolojia na Ubora wa Maisha kwa waathirika walioungua kwa kutumia kipimo cha tathmini ya zana ya ulemavu ya shirika la afya duniani II WHODAS-II

Jinsi ya kushiriki: Ukikubali mwanao kuwa sehemu ya utafiti huu, taarifa za mwanao zitakusanywa kulingana na ubini wake, muda uliopita tangu tukio la kuungua, ukubwa wa eneo la kuungua, na eneo mahususi la kuungua. Kisha, uchambuzi utafanyika kwa kutumia zana iliopendekezwa. Makubaliano yako kwa mtoto wako kushiriki katika utafiti huu yatathaminiwa sana.

Usiri: Hakuna mtu atakayeweza kufaham ushiriki wa mwanao kulingana na taarifa ulizozitoa, na taarifa zote zilizokusanywa kutoka kwa mshiriki zitakuwa siri. Taarifa hizo hatapewa mtu yeyote ambaye hajaidhinishwa na mshiriki.

Faida: Ukikubali mtoto wako kushiriki katika utafiti huu, maelezo yaliyokusanywa yataonyesha hali halisi ya maisha ya waathirika wa moto. Ufahamu wa hili, litasaidia watunga sera katika kutathmini upya hali ya waathirika. Ili mbinu mbalimbali za usimamizi ziweze kutumika kuwasaidia wahanga hawa ikiwemo na mtoto wako, kurudi tena katika jamii kama mshirika anayefanya kazi kikamilifu.

Athari: Hakuna madhara yoyote yanayotarajiwa kutokea kwa mshiriki wa utafiti huu, kwakuwa taarifa za mshiriki zitakusanywa kwa kutumia zana kutoka Shirika la Afya duniani na baadhi ya tarifa zitakusanywa kutoka kwenye mfumo au faili.

Gharama: Hakuna malipo yatakayohitajika kutoka kwako kama ada ya ushiriki wa mwanao katika utafiti huu.

Haki ya kujitoa katika utafiti : Ni uamuzi wako kushiriki au kutoshiriki kwa mwanao katika utafiti huu. Una hiari ya kusitisha ushiriki wa mwanao wakati wowote, kipindi cha mahojiano au hata baada ya kukamilika. Hakuna adhabu au hasara atakayoipata kwa ushiriki katika utafiti huu**.**

Mawasiliano: Ikiwa una maswali yoyote kuhusu utafiti huu, unaweza kuwasiliana na mtafiti Dk. Kassim Bahsan au wasimamizi wake Dk Ramadhan na Dk. Muhamba wa Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, P. O. Box 65001, Dar es salaam au Mwenyekiti wa kamati ya seneti ya utafiti na uchapishaji P. O. Box 65001, Dar es Salaam, Simu +255222152489, Dar es Salaam.
Namba ya simu ya mkononi ya mpelelezi mkuu +255 62 107 6771

Makubaliano ya mshiriki: Mimi …….. nimesoma na kuelewa yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Nimekubali ushiriki wa mwanangu katika uchunguzi huu.

Sahihi ya mlezi/mzazi: ……. Tarehe……

Sahihi ya mtafiti Mkuu:… …….
Tarehe……..……..

Appendix V: Ethical Clearances

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/1938

Date: 07/10/2023

MUHAS-REC-10-2023-1938
KASSIM BAHSAN
SCHOOL OF MEDICINE
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: QUALITY OF LIFE IN BURN SURVIVORS USING WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCALE II AT MUHIMBILI NATIONAL HOSPITAL

Reference is made to the above heading.

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

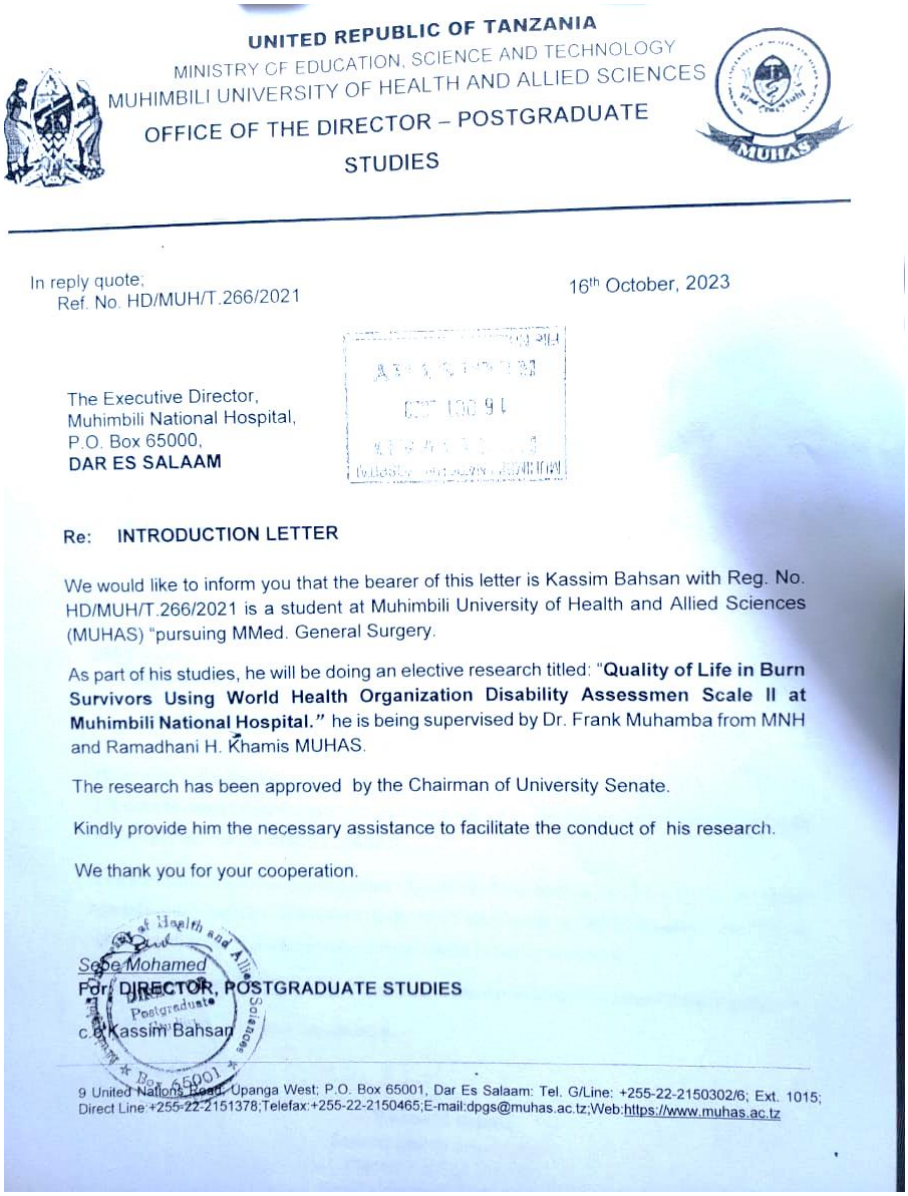
APPROVAL DATE: 07/10/2023
EXPIRATION DATE OF APPROVAL: 07/10/2024

STUDY DESCRIPTION:
Purpose:

The purpose of this cross sectional observational study is to assess the long-term psychological distress and quality of life among burn survivals using WHODAS-II.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided.
https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014801.pdf and in the MUHAS archives.

Appendix VI: Introduction Letter



UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote:
Ref. No. HD/MUH/T.266/2021

16th October, 2023

The Executive Director,
Muhimbili National Hospital,
P.O. Box 65000,
DAR ES SALAAM

Re: INTRODUCTION LETTER

We would like to inform you that the bearer of this letter is Kassim Bahsan with Reg. No. HD/MUH/T.266/2021 is a student at Muhimbili University of Health and Allied Sciences (MUHAS) "pursuing MMed. General Surgery.

As part of his studies, he will be doing an elective research titled: "**Quality of Life in Burn Survivors Using World Health Organization Disability Assessmen Scale II at Muhimbili National Hospital.**" he is being supervised by Dr. Frank Muhamba from MNH and Ramadhani H. Khamis MUHAS.

The research has been approved by the Chairman of University Senate.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.

Sebe Mohamed
For: **DIRECTOR, POSTGRADUATE STUDIES**
c.c Kassim Bahsan

9 United Nations Road, Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix VII: Permission Letter

THE UNITED REPUBLIC OF TANZANI

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/CRTCU/Perm/2023/530 Date: 20th October 2023

Head of Department

- Outpatient
- Medical Records

Muhimbili National Hospital

RE: EXTENSION FOR DATA COLLECTION PERMIT AT MNH.

Name of Student	**Kassim Bahsan**
Title	**"Quality of Life in Burn Survivors Using World Health Organization Disability Assessment Scale II at MNH".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Dr. Ramadhani Khamis (MUHAS)
Co – Supervisors	Dr. Frank Muhamba (MNH)
Period	20th October, 2023 to 30th March, 2024

Approval has been granted to the above principal investigators to collect data at MNH. Dissemination of study findings at MNH shall be overseen by **Dr. Frank Muhamba** (MNH) supervisor.

Kindly ensure the named principal investigator abide to the ethical principles and other conditions of the research approval.

Sincerely,

Dr. Jessie Mbwambo
Head of Clinical Research, Training and Consultancy Unit

c.c DMS, DICT
c.c Dr. Frank Muhamba
c.c Kassim Bahsan

HEAD, TEACHING, RESEARCH & CONSULTANCY UNIT * MUHIMBILI NATIONAL HOSPITAL * P. O. Box 65000 DAR-ES-SALAAM

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