



**UNIVERSITY of
RWANDA**

**COLLEGE OF MEDICINE AND HEALTH SCIENCES, SCHOOL OF MEDICINE AND
PHARMACY, DEPARTMENT OF SURGERY**

**EVALUATION OF THE QUALITY OF LIFE OF BURN SURVIVORS AT THE UNIVERSITY
TEACHING HOSPITAL OF KIGALI**

Dissertation submitted in partial fulfillment of the requirements for the award of the degree of
Master of Medicine in General Surgery, University of RWANDA

By Dr. BUSOMOKE Denys Fabrice

SUPERVISOR: Professor NTIRENGANYA Faustin, MD, MMED, FCS (Ecsa)

CO-SUPERVISOR: Dr. MUNYANEZA Robert, MD, MMED


September 30, 2022

DECLARATION

THE RESEARCHER:

I declare this dissertation "EVALUATION OF THE QUALITY OF LIFE OF BURN SURVIVORS AT THE UNIVERSITY TEACHING HOSPITAL OF KIGALI (CHUK)." is my work and no one has submitted it to any other University for the award.

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Date: 30/09/2022

Dr. Denys Fabrice BUSOMOKE

SUPERVISOR:

I declare this dissertation: "EVALUATION OF THE QUALITY OF LIFE OF BURN SURVIVORS AT THE UNIVERSITY TEACHING HOSPITAL OF KIGALI (CHUK)." is my work and no one has submitted it to any other University for the award.

Dr. Denys Fabrice BUSOMOKE submitted it with my approval.

Signed ... 

Prof Faustin NTIRENGANYA

DATE... 30/09/2022

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DEDICATION

To my beloved wife and best friend, Dr. Angelique UWAMAHORO

My son BUSOMOKE Peace Oshea

My parents

My brother DUSABE Simpliste and MBONYINSHUTI Francois

For your invaluable support and encouragement

TABLE OF CONTENTS	
DECLARATION	II
ACKNOWLEDGMENTS	III
DEDICATION	IV
TABLE OF CONTENTS	V
LIST OF TABLES	VII
LIST OF FIGURES	VIII
LIST OF ABBREVIATIONS	IX
ABSTRACT	X
CHAPTER 1. INTRODUCTION	1
1.1 BACKGROUND	1
1.2. Problem Statement	2
1.3. Significance of the Study	3
1.4. Research question and Hypothesis.....	3
1.4.1. Research Questions	3
1.4.2. Hypothesis.....	3
1.5 Aim and Objectives.....	4
1.5.1. The Aim of Study.....	4
1.5.2. Specific objectives of the Study.....	4
CHAPTER 2: LITERATURE REVIEW	5
2.1. INTRODUCTION	5
2.2. EPIDEMIOLOGY	5
2.3. Classification of burn.....	5
2.4. PATHOPHYSIOLOGY.....	5
2.5. Metabolism after Burns.....	6
2.6. TREATMENT OF BURN PATIENT.....	6
2.7. Surgical Treatment.....	7
2.8. Tools for measuring the quality of life.....	7
2.9. Importance of measuring the quality of life.....	7
2.10. Level of the function of burns patients	8

2.11. Factors influencing quality of life.....	8
2.12. Interventions that improve quality of life.....	8
CHAPTER 3: MATERIALS AND METHODOLOGY	9
3.1. Instrument	9
3.2. Methodology	9
3.2.1 Study design.....	9
3.2.2 Study settings	9
3.2.3 Inclusion and Exclusion criteria.....	9
3.3. Sample size and sampling technique	10
3.4 Data collection methods and instruments	10
3.5. Data management and Analysis.....	10
3.6. Ethical consideration.....	11
CHAPTER 4: RESULTS	12
4.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF BURN SURVIVORS	12
4.2. Functional outcomes of burn survivors at CHUK.....	15
4.2 Quality of life of burn survivors	16
4.3 Distribution into different categories of QoL.....	17
4.4 Factors influencing quality of life among patients with burn	18
CHAPTER 5: DISCUSSION	23
CHAPTER 6: CONCLUSION AND RECOMMENDATION	26
6.1. Conclusion	26
6.2. Recommendation	26
REFERENCES.....	27
ANNEXES	33
Annex 1: QUESTIONNAIRE ON EVALUATION OF QUALITY OF LIFE OF BURN SURVIVORS	33
Annex 2: Informed consent.....	35
ANNEX 3: IRB approval.....	39

LIST OF TABLES

Table 1: Socio demographic characteristics of burn survivors..... 12
Table 2: Functional outcomes..... 15
Table 3: Factors influencing the quality of life among patients with burns 18

LIST OF FIGURES

Figure 1 Quality of life of burn survivors..... 16
Figure 2: Category of QoL among patients with a burn. 17

LIST OF ABBREVIATIONS

ABS: American Burn Association

BSHS-B: burn-specific health scale breath.

CHUK: university teaching hospital of Kigali

HRQoL: Health-Related Quality of life

IRB: Institutional Review Board

LMICs: Low and Middle-Income Countries

LOHS: Length of Hospital stay

OPD: Out Patients Department

P-V: P-value

QoL: Quality of LIFE

REE: elevated resting energy expenditure

SPSS: Statistical Package for the Social Sciences

TBSA: Total Body Surface Area

UR: University of Rwanda

USA: United State of American

WHO: World Health Organization

ABSTRACT BACKGROUND

Burns can have a massive negative impact on psychological and physical functioning that affect the quality of life of burn patients. Burn injury can significantly lower a person's quality of life by interfering with their ability to function both psychologically and physically. The aim of this study was to evaluate the quality of life of burn survivors at the University teaching hospital of Kigali

METHODOLOGY

This was a cross-sectional Study, conducted from April 2021 to June 2022 at The University teaching hospital of Kigali (CHUK). Data were collected using burn specific health scale breath (BSHS-B) questionnaire. Epidata was used to collect and store the data, while SPSS version 23 was utilized for Analysis. Descriptive statistics have been used to generate frequencies and percentages. Bivariate and multivariate Analysis was done to assess correlations between variables and factors associated with quality of life. A p-value of less than 0.05 was considered to be statistically significant.

RESULTS

63 participants were included, 38(60%) patients were female, 27(42.85%) were aged below 18 years, and 27(42%) were married. The flame was the most cause of burns 29(46%) followed by scald 25(40%). Limited functionality due to joint stiffness and postburn contracture was found in 40% of patients; The majority of patients (54%) were in low socioeconomic classes (Ubudehe 1 and 2) Major burns (more than 20% TBSA) represented 65% of our patients. Overall, the mean length of hospital stay was 36.6days. 61.9% participants reported a poor QoL while 25.4% were classified in the “worst quality of life” category. No patient was classified in “best quality of life” category.

The QoL determinants included age (p-value=0.01), gender (p-value=0.017), LoHs (p-value=0.03), affected body party (p-value=0.003), TBSA (p-value=0.008), burn Depth (p-value=0.002) and Cause of burn (p-value=0.02).

Conclusion:

The QOL for burn survivors at CHUK is unacceptably poor. We propose training of more plastic surgeons, physiotherapist, increasing burn center capacity and additional study is required to comprehend the epidemiological profile and factors influencing the development of post-burn contracture in burn survivors at CHUK.

Keywords: Burn, Quality of life, Burn specific health scale

CHAPTER 1. INTRODUCTION

1.1 BACKGROUND

Burns constitute a significant global health challenge, estimated 300,000 fatalities each year (1).

Millions more people experience burn-related disabilities and deformities, which have an impact on the burn survivors' psychological, social, and economic well-being(1). Globally 7.1 million burns happen every year, resulting in 18 million disability-adjusted life years injuries. Actually, 90% of burn injuries take place in low- and middle-income nations, and Rwanda is no exception (1). Indeed, Sub-Saharan countries bear an exceptional burden of burn injuries among their children(1)(2). According to Casarez's 2009 study, fire-related burns are the second-leading cause of death for children under the age of five, and between 300,000 and 17.5 million of them sustain burn injuries every year (3).

In addition to those individuals who suffer from burns, others are left with injuries and disfigurements that last a lifetime affecting their QoL. Many burn survivors always deal with stigma and rejection, which often come with long-lasting disabilities(1).

Generally, burn on the face most affects the aesthetic appearance of the individual while burn on the hand is the one that impacts most the utility and functionality of the human being.

Burn management implies a multidisciplinary approach that includes surgeons, nurses, psychiatrists, and physiotherapists. Burn injuries burn injuries often affect the quality of life in all its components: beauty, social, psychological, and physical functioning (9).

The risk of post-burn complications is related to the degree of burn and the burned patient's comorbidities (4). In most situations, the majority of post-burn survivors have a poor QoL.

In fact, health related quality of life, which encompasses terms related to health, sickness, and health care or health status, has been used to refer to the category of living conditions that refers to physical condition that reflects the actual state of well-being. Therefore, the word "quality of life" refers to a comprehensive and multidimensional evaluation of physical, psychological, and social factors (5). In spite of the possibility of an increase in the number of persons with impairments or a decline in abilities, a QOL strategy aims to maintain a high degree of well-being among people. Therefore, the primary goal is to preserve appropriate levels of functioning

and high levels of enjoyment of life for as long as possible in the areas that an individual considers to be significant. When it comes to determining people's health, quality of life is key. Its status can affect people's physical health, psychological well-being, social relationships, and climate. As a consequence, it is synonymous with the "state of full physical, emotional, and social well-being, rather than simply the absence of illness or infirmity," which is implicit in the concept of health (6).

In the sense of burns, QOL is most frequently reflected as a multidimensional term that encompasses functional well-being, reflecting impacts daily living activities, job performance, emotional health, and spiritual wellbeing, care satisfaction, economic well-being, and social functioning, according to patient expectations of both qualities of life and burn conditions(7). Burn survivors face several difficulties related to the physical, psychological, and late social effects of their injuries, despite substantial challenges in burn patient care. The influence of thermal injury on patients' lives is not well understood (8,9).

1.2. Problem Statement

Thousands of unnecessary deaths and disabilities are caused by burns each year, which is a significant public health issue. WHO estimates that about 90% of global burn incidences happen in developing countries. In comparison to the developed world, When significant progress in the primary and secondary prevention of burn injuries has been made, developing countries continue to face challenges related to a lack of adequate awareness of epidemiological characteristics and associated risk factors(10).

Furthermore, there is an unmet need for a robust infrastructure to prevent incidental exacerbation of burn injuries. Along with these difficulties, several factors have been linked to a high rate of burn injuries in developing countries, including high population density, illiteracy, and poverty

Furthermore, there is an unmet need for a robust infrastructure to prevent incidental exacerbation of burn injuries. Along with these difficulties, several factors have been linked to a high rate of burn injuries in developing countries, including high population density, illiteracy, and poverty (11).

The quality of life of burn patients is critical for children and women, which are the main vulnerable groups. Starting on the day of the injury, burn patients' rehabilitation may comprise a phase of very specialized and technologically focused intensive care. Additionally, it may result in potential long-term issues like limitations in muscle strength and range of motion, changes in

appearance, psychological disturbances, and occasionally, extensive social and environmental dislocation(12).

A study conducted in Rwanda by Mugemana and Rogo on burns in children admitted at the university teaching hospital of Kigali (CHUK), highlighted that three of the four burns due to the fire were females aged 4 to 15 years of Age. This age group of girls typically assists their mothers in household chores, potentially placing them at risk for the hazards brought by cooking with firewood (2). Although different studies have narrowed many aspects of burns, including their description and rehabilitations, very few studies were done in low and middle-income countries about the quality of life of burn patient survivors. Besides, there is no study yet in Rwanda that focuses on improving the preventive primary and rehabilitation process of burns-associated disabilities based on an evaluation of the QoL in burn patients.

1.3. Significance of the Study

It is important to evaluate the Quality of Life of burn survivors to identify factors influencing it so that measures to mitigate them can be proposed. Our Study intends to evaluate the QoL of burns patients to improving preventive measures for burn-associated disabilities

Indeed, Regarding the quality of life for burn survivors in Rwanda, very little is known. However, information about the QoL of burn patients will help healthcare providers to provide special attention to rehabilitation, and design appropriate curative and preventive plans.

This study, will give important information to be disseminated and implemented as part of routine clinical care in burn patients, it will be used by policy-makers and it can guide further research to improve QoL.

1.4. Research question and Hypothesis

1.4.1. Research Questions

What is the Quality of life of burn survivors at the University Teaching Hospital of Kigali?

1.4.2. Hypothesis

We hypothesize that the QOL of post-burn patients is poor, impaired following the socioeconomic status of the patients/survivors and thus there is a need to improve it.

1.5 Aim and Objectives

1.5.1. The Aim of Study

The aim of this study is to assess burn survivors' quality of life at the university teaching hospital of Kigali.

1.5.2. Specific objectives of the Study

- i. To describe sociodemographic and clinical characteristics of burn survivors at CHUK
- ii. To determine the functional outcomes of burn survivors at CHUK
- iii. To determine the overall QoL of burn survivors as seen at CHUK
- iv. To identify the determinants of quality of life in post-burn patients.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

Burns are organic tissue wounds that can occur on the skin or in other parts of the body. They are typically caused by thermal stress or another type of acute trauma(13). A burn occurs when hot liquids, heated solids, or flames completely damage the skin's or other tissues' cells (scalds, contact burns) (flame burns). Burns are defined as wounds on the skin brought on by radiation, radioactivity, electricity, friction, or chemical contact(14).

2.2. EPIDEMIOLOGY

Burns are the fourth most common form of trauma(14). The World Health Organization (WHO) estimates that each year, more than 300,000 people worldwide die from burns brought on by flames(1)(14). Currently, 90% of burns occur in middle- and low-income nations due to a lack of infrastructure(14) (15). The concept of burn patient quality of life entails a thorough evaluation of numerous elements of burn patients' social, psychological, and physical well-being(16). After leaving the hospital, burn survivors may experience emotional problems as well as physical, psychological, and psychosocial manifestations that may lower their quality of life (17). QoL; from the standpoint that sees the latter as a fundamental citizen's right, the idea can help improve both the quality and integrated, multifaceted nature of healthcare.

Risk factors for death in burns

Numerous risk factors and causes contribute to trauma's fourth most common cause. While it has a much impact on a patient's health and outcomes, it also demands a significant amount of resources from the healthcare system for patient management and rehabilitation. Over 18% of hospitalized burns patients pass away due to major risk factor which include advanced age, flame burns, a larger percentage of total burned surface area (% TBSA), and inhalation injury (18)(19).

2.3. Classification of burn

The most serious trauma that has ever befallen humanity since the dawn of time are burns. They are a type of thermal injury brought on by biological, chemical, electrical, and physical factors, with effects that are both localized and systemic(20). Results in treating burns have improved throughout time and in part because of the scientific revolution(21):

If depth is taken into account, burns are divided into three categories: first-degree burns, which only affect the epidermis (sunburn), second-degree burns, which affect the epidermis and the papillary dermis and third class, which affect all three layers of the skin as well as the muscles(22) .

2.4. PATHOPHYSIOLOGY

Burns can cause both localized and systemic damage that significantly modifies homeostasis and it is now considered the most devastating Trauma(23)

Jackson describes the pathophysiological changes during burns that consist of the formation of three-zone(21)(23):

The first is the region of coagulation, which is near the aggressor agent and where there is acute necrosis of the tissue with protein denaturation and the release of damage-related molecular patterns(24). The second is the zone of stasis, which is distant from the first, maintains blood flow and has a 50% chance of survival, according to water resuscitation. The third is the area of hyperemia, which also retains blood flow and is in a state of hyperemia(13)(22):

The stress condition is accentuated at the endothelial level by significant cell dysfunction and extensive capillary leakage. Nitric oxide synthase synthesis rises as a result of the immune response being activated, which also causes increase with regard to vasodilation and capillary(21).

Systemic alteration is due on how much of the body surface was burned; they often occur when that amount was greater than 10%(22). Sepsis has been identified as the primary cause of death in patients with burn injuries in a number of international studies, and *Pseudomonas*, *Acinetobacter*, and *S. aureus* are the bacteria that are most commonly involved. These modifications lead to a general catabolic condition that raises the danger of infections with a deadly outcome(20)(23).

2.5. Metabolism after Burns

There is a brief period of hemodynamic instability, decreased tissue blood flow, and increased catecholamine release occurs after burn injury(25).The "ebb phase" refers to this initial stage and it is primarily consisting of decreased metabolic process and total oxygen intake(26).

The "flow phase" gradually replaces the ebb phase and is characterized by higher substrate fluxes, high oxygen consumption, raised resting energy expenditure, and rapid potassium and nitrogen losses(26). Visceral blood flow total cardiac output and splanchnic oxygen consumption increase(27).

It was reported that patients with severe burns are characterized by elevated metabolic rate to 118% to 210% in adults and Resting metabolic rate of approximately 180%(26).The healing phase starts once the acute phase is over and the burned surface is covered.

In order to deal with physical rehabilitation and the completion of wound healing, high levels of energy are required at this time for severe burns this phase may last up to 2year(13)

2.6. TREATMENT OF BURN PATIENT

The management of burn patients is divided into two stages, the initial care consists of the protection of the airway and adequate water reanimation.

The second stage is directed by rechecking and identifying if there is a progression of burn and giving definitive treatment through early graft or flap

2.7. Surgical Treatment

Cutaneous grafts are pieces of skin that have been removed from a donor surface but have not yet developed their own vascularization. They are then applied to a recipient surface and go through an integration phases(28). Grafts are divided into many categories based on where they came from: autografts (from the same patient), allografts (from a different member of the same species), and xenografts (from other species).;

By their thickness, they are categorized into the partial thickness and full thickness (including the three skin layers)(24)(26). Treatment with cutaneous grafts concentrates on avoiding the granulation phase, where the wound contracts, especially in privileged locations in terms of appearance and functionality(29).

2.8. Tools for measuring the quality of life

Health-related quality of life (HRQL) is an outcome measure that represents a patient's perception of their health status on physical, psychological and social well-being following an injury or disease (30)(16). In general, the idea of the quality of life (QL) entails a thorough and comprehensive assessment of areas pertaining to physical, psychological, and social components(31)(32). Due to this, the instrument selected for evaluation contributes to contextualizing the theme under study in addition to the concept, meaning it must do so.

Simple abilities, heat sensitivity, hand function, treatment of regimens, job, body image, affect, interpersonal connections, and sexuality are among the nine HRQL domains covered by the BSHS-B, which consists of 40 items in total(33). Responses to each item are graded on a five-point scale that ranges from 0 (very) to 4(not at all). High scores indicate a perceived health status that is in good shape, according to the average scores per domain. The HRQL recovery pattern could be examined in 17 of the 47 research that employed the BSHS-B or BSHS-R(33)(16).

2.9. Importance of measuring the quality of life

Burn is a serious disease that can possibly cause severe morbidity and significant mortality in addition to having a sizable impact on both health and the economy. Being able to survive a major burn damage is considered as traumatic.

An increasing number of patients are surviving burns as a result of significant improvements in burn treatment(34). Burns can significantly impair daily activities, as well as physical and psychological functioning(35)(36).

Disability in burn damage, especially the scars, may linger for several years, or even decades, and are regarded the major difficulty for the patient's QoL (29).Measuring the quality of life is important To improve In the management of burs survivors(37)(38).

2.10. Level of the function of burns patients

Most variables studied like social support, body image, and social participation of burn survivors in the first year of rehabilitation were still affected(39)(40). The effect of patient and injury variables on employment for working-age, adult survivors of burn damage utilizing the multicenter Burn Model System national database in the United State indicated that preinjury employment remains the most significant predictor for postburn employment(29)(41)

2.11. Factors influencing quality of life

Factors influencing the quality of life include Age, education level, occupation, marital status, and source of spending(42)(43). Temperature sensitivity was shown to affect QoL but over time the effect is intrusive(44). Burn patients experience economic burden and depletion due to their long course of hospitalization, and many studies showed that the economic burden affects HRQoL.(45). Severely burned patients have poor HRQoL, and the dimensions most frequently affected include pain/discomfort and anxiety/depression(42). For patients with a lengthy hospital stay, females and older patients are at higher risk of low HRQL in the long term (36)(31). Gender plays a role in QoL in burn survivors(11)(31)

2.12. Interventions that improve quality of life

Improvements in quality of life following discharge can be attained through rehabilitation and acceptance of one's impairment. (12)(46). The impact of support, coping, and acceptance, the significance of job, physical changes, and limits have all been highlighted as important elements that influence burn rehabilitation and improve quality of life(12) (47). It is shown that quality of life is reliant on coping with burns, perceived stigmatization and resilience through social comfort(48).

CHAPTER 3: MATERIALS AND METHODOLOGY

3.1. Instrument

The Study used the Burns Specific Health Scale-Brief (BSHS-B) questionnaire as an appropriate measurement tool for assessing the general, physical, mental, and social health aspects of the burn survivor. It is commonly used to assess the quality of life, and the tool includes 40 items distributed over nine domains, allowing us to analyze the result(49). The Burn Specific Health Scale (BSHS) is the only instrument used to assess burn survivors' health status. It was first created by Blades et al. in 1982 and has undergone several revisions; the most recent is the (BSHS-B) produced by Kildal et al. in 2001(35). The brief 40-item BSHS-B construct can yield nine well-separated and clinically relevant factor domains. The BSHS- B and good domain separation make it a good prospect for further clinical use as a self-administered interview for postburn patients (50). This Study will assess the QoL of post-burn survivors using the burns specific health scale brief to ensure quality treatment, allow patients to work at their optimal health status, and encourage optimal QOL.

3.2. Methodology

3.2.1 Study design

This study was a cross-sectional study over 12 months, from April 2021 to June 2022.

3.2.2 Study settings

The Study was conducted at Kigali University Teaching Hospital, including patients with burns followed from Out Patients Department. It is a 500-bed tertiary public and university teaching referral hospital that serves more than 120.000 patients a year. It is located in the center of Kigali and receives patients transferred from district hospitals, private clinics and emergency cases

3.2.3 Inclusion and Exclusion criteria

The Study included:

- Above the Age of 12 year
- Whose burn wound are healed
- Whose burn injury happened more than three months from the day of interview

The Study excluded:

- Pediatric burnt patients below 12 years, including
- Suicidal, homicidal-related burns

- Burns cases with psychiatric diseases
- Acute burns

3.3. Sample size and sampling technique

In this cross-sectional investigation, the proportional formula $n = Z^2 P(1 - P) / d^2$

Was used to calculate the sample size.

Where P is the anticipated prevalence (which can be found in the same studies or a pilot study undertaken by the researchers), n is the sample size, Z is the statistic corresponding to the level of confidence, and d is precision (corresponding to effect size)(51).

Hence: $n = (95\%)^2 * 19\% (1-19\%) / (0.05)$

=55.55~ =56 patients.

3.4 Data collection methods and instruments

The questionnaire was used to gather information, including demographic information such as age, sex, marital status, TBSA, and education, as well as the Burn Specific Health Scale-Brief. Using BSHS-B, the Study evaluated the QoL of post burns survivors to promote the quality of care, enable patients to function to their optimal health status and support interventions to prevent burn-related disabilities.

The patient was enrolled in the Study from our outpatient clinic; all patients who consulted the OPD clinic after burn and consent to participate in the Study were included. The questionnaire (BSHS-B) was delivered by interview instead of filling themselves. Some of them might not be written, and at the time of the interview, basic sociodemographic information as well as specifics about the type and severity of burns were gathered.

3.5. Data management and Analysis

Collected data was entered in Epidata version 3.1 and exported to SPSS version 23 for Analysis. Descriptive statistics were used to analyze the samples and the demographic and clinical characteristics of the sample. Associations between the different sociodemographic and clinical factors and QoL calculated using BHS-B were assessed using the Chi-square test, and means and median were used to summarize continuous variables. Significance was defined as a p-value of less than 0.05

3.6. Ethical consideration

The research proposal was presented and approved by the Department of Surgery/UR. It was evaluated and approved by the IRB (Institutional Review Board) of the University of Rwanda, College of Medicine and Health Sciences. Before data collection, additional respective ethical clearances were obtained from the University Teaching Hospital of Kigali (CHUK).

Informed consent was obtained from the patient. The information obtained will be treated confidentially and only used for research purposes.

CHAPTER 4: RESULTS

Sixty three burn survivors followed in the outpatient department of the burn clinic at the University Teaching of Kigali have been included in this Study

4.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF BURN SURVIVORS

Table 1: Socio demographic characteristics of burn survivors

Variable	Category	Count	Percentage (%)
AGE GROUP	12-18	27	42.85
	>18-50	33	52.38
	Greater than 50	3	4.76
SEX GROUP	Female	38	60.3
	Male	25	39.7
RESIDENCE GROUP	Urban	36	57
	Rural	27	43
Marital status before burn	Single	35	55.5
	Married	27	42.8
	Separated	1	1.7
Marital status after burn	Single	34	54
	Married	17	27
	Separated	12	19
Educational status	Primary	36	57
	Secondary	11	17
	University	1	2
	None	15	24
Occupational status	Farmer	16	25

before burn			
	Government paying job	3	5
	Private paying job	16	25
	No job	28	45
Occupational status after burn	Farmer	12	19
	Government paying job	2	3
	Private paying job	3	5
	No job	46	73
Ubudehe category	Category one	6	9.5
	Category two	23	36.5
	Category three	34	54
	Category four	0	0
Education before burn	Yes	34	54
	No	29	46
Education after burn	Yes	28	44
	No	35	56
Cause of burn trauma	Scald	25	40
	Electric	6	9
	Flame	29	46
	Chemical	3	5
Burn place	Home	51	81

	Out home	9	14
	Job	3	5
Burn depth	1st degree.	0	0
	2nd degree	53	84
	3rd degree	10	16
Affected body part	Exposed	47	75
	Unexposed	16	25
% TBSA	<10%	1	2
	10-20%	21	33
	>20%	41	65
Surgery	Yes	33	52
	No	30	48
Time since burn	< months	0	0
	3-6months	0	0
	6-12months	11	17
	> 12months	52	83
Length of hospital stay	<=30 DAYS	29	46
	>30 DAYS	34	54

Table 1. Illustrate that 52.38 of the burn patients were at the age of 18 and 50 years and The average Age was 26 years. Most burn patients were female 60.3% and Married were 27%.

Majority of study participants lived in urban area (57%) and 46% were in low socio-economic class (cat1 and 2 ubudehe);

Regarding education level, most patients attend only primary school at a percentage of 57% and 25% didn't have formal education while only one patient attended university school.

As occupation overall, the majority of the burn patient was jobless 45%; 25% were farmers, and also 25% used to do the private job before the burn and after the burn, jobless increased to 73%, and this was potentially affecting their QoL

For the cause of burn, the majority were injured by flame 46%, followed by scald 40% and chemical burn account for only 5%.

This table also illustrates that the majority (65%) suffered burns involving more than 20% TBSA, and exposed areas were predominant (75%). The mean length of hospital stay was 36.6 days, while most patients stayed in the hospital for more than 30 days and accounting for 53.9%. Most of our study participants had burns lasting more than 12 months, and none had burn less than six months.

We found that 52% of patients who underwent surgery after burn mostly were skin grafts and contracture release. Regarding burn complications 40% had contracture, and 1% had amputation post-burn.

4.2. Functional outcomes of burn survivors at CHUK

Table 2: Functional outcomes

TYPES OF COMPLICATION	NUMBER OF PATIENTS	PERCENTAGE
NORMAL SCAR	24	38.1
HYPERTROPHIC SCAR	13	20.6
Contracture	25	39.7
Amputation	1	1.6
TOTAL	63	100

This table illustrates that 39.7% of our study patients had contracture, 20.6% had a hypertrophic scar, and 1.6% had amputation.

4.2 Quality of life of burn survivors

Figure 1 Quality of life of burn survivors.

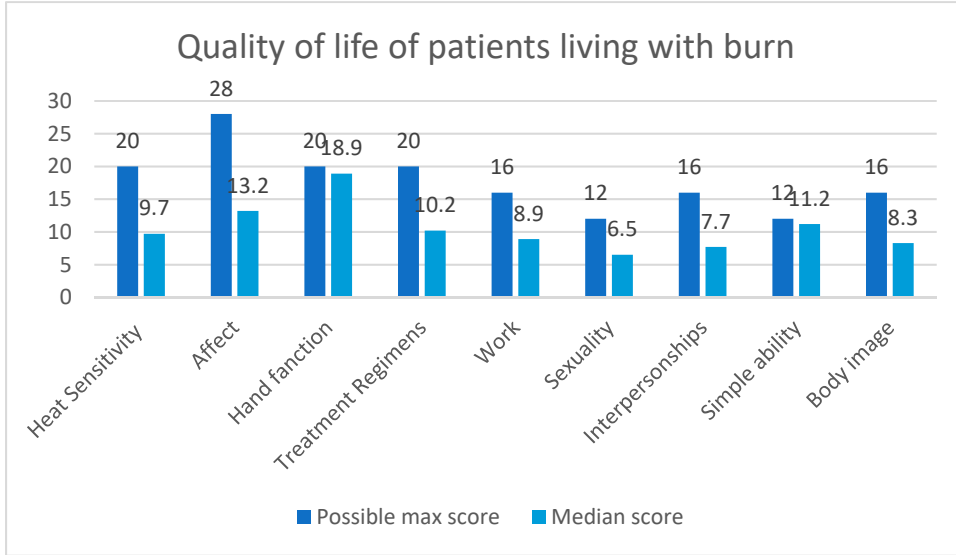
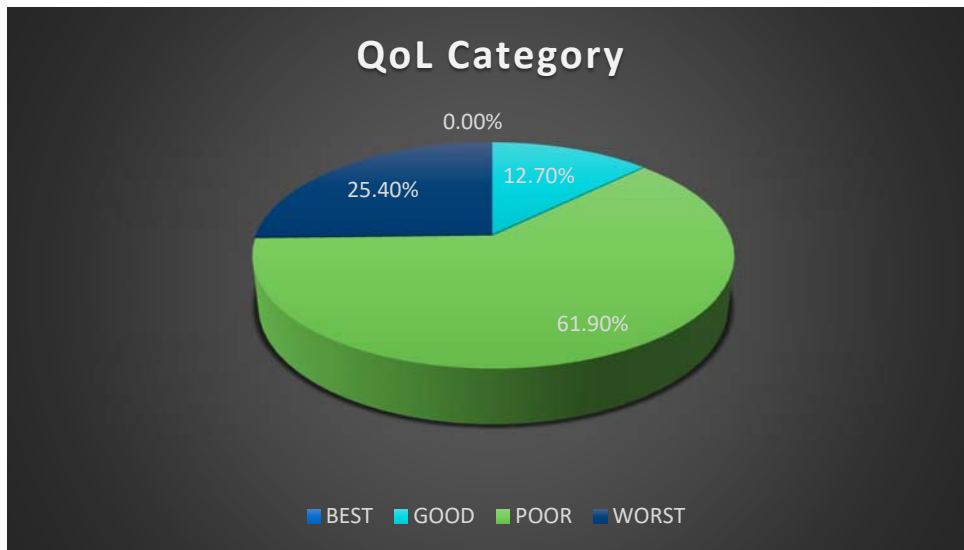


Figure 1 shows that the overall median quality of life was around half of the total overall score, indicating the lousy quality of life for burn survivors. For affect, treatment regimen, work, their median quality scores were not above half the total quality score, indicating an impaired quality of life for those assessed indicators. The median score for hand function and simple abilities were good.

4.3 Distribution into different categories of QoL

Figure 2: Category of QoL among patients with a burn.



Burn-related QoL Scores: Best (>145), Good (121– 145), Poor (81 – 120), and worst (≤ 80)

Figure 2 shows that most burn patients had poor and worst quality of life with 61.9% and 25.4%, respectively and 12.7 % having good QoL and none having the best quality of life.

4.4 Factors influencing quality of life among patients with burn

Table 3: Factors influencing the quality of life among patients with burns

Variable	Heat Sensitivity		Affect		Hand function		Treatment Regimens		Work		Sexuality		Interpersonal Relationship		Simple abilities		Body image	
	M	P-V	M	P-V	M	P-V	M	P-V	M	P-V	M	P-V	M	P-V	M	P-V	M	P-V
GENDER		0.036		0.17		0.38		0.30		0.22		0.49		0.49		0.24		0.07
Male	1.7		4		1.6		2		2		2		4		2		2.2	
Female	1.8		4		2		2		2		1.7		4		2		2	
AGE GROUP		0.01		0.05		0.31		0.04		0.02		0.36		0.001		0.27		0.014
≤18	2.4		1.6		4		2.4		2.5		3		2.5		4		2	
>18	1.6		2		4		1.8		1.7		2		1.7		4		2.5	
UBUDEHE		0.02		0.00		0.00		0.031		0.41		0.03		0.045		0.05		0.01
CAT I/II	1.6		1.5		1.5		1.8		1.7		1.8		1.7		4		1.7	
CAT III	2.2		1.9		2		2.2		2		2		1.7		4		2.2	
EDUCATION		0.243		0.108		0.22		0.017		0.085		0.040		0.014		0.219		0.289
None/Primary	1.8		1.8		4		2		1.7		2		1.5		4		2.2	
Secondary/Univ	1.9		2		4		1.9		2		2.6		2		4		2	
OCCUPATION BEFORE		0.197		0.073		0.00		0.390		0.36		0.03		0.271		0.5		0.046
Paying occupation	2.1		2.1		1.7		1.9		2		1.9		1.7		4		2	
None paying	2.2		1.9		2.1		2.1		2		2.2		1.8		4		2.3	
OCCUPATION AFTER		0.036		0.007		0.00		0.109		0.263		0.017		0.028		0.048		0.001
Paying occupation	2		1.7		2		1.8		2		1.9		1.7		4		1.7	
None paying	2.1		1.8		1.8		2.1		2		2		1.7		4		2.2	

RESIDENCE GROUP	0.012		0.001	0.27	0.063	0.000	0.005	0.01	0.372	0.014
Urban	2.1	2.14	4	2	2.5	2.8	2	4	2.25	
Rural	1.6	1.7	4	1.8	1.7	1.6	1.7	4	1.7	
Marital status before	0.083		0.047	0.44	0.114	0.673	0.015	0.014	0.378	0.059
Living with partner	2.2	1.9	4	2.2	2.2	3	1.7	4	2	
No partner	1.6	1.5	4	1.8	1.75	2	2	4	2.2	
Marital status after	0.083		0.047	0.44	0.221	0.033	0.012	0.018	0.378	0.039
Living with partner	1.6	1.9	4	1.8	1.7	2	1.75	4	2	
No partner	2.2	1.5	4	2.2	2.3	2.5	2	4	2.25	
Burn depth	0.070		0.115	0.01	0.005	0.102	0.264	0.290	0.025	0.002
2nd degree	2	1.7	4	2	2	2	1.7	4	2	
3rd degree	2	2.1	3.4	2.4	2.2	2	1.7	3.	2	
Affected body part	0.025		0.003	0.00	0.428	0.001	0.032	0.108	0.072	0.040
Exposed	1.8	1.8	3.5	2	1.7	2.3	1.7	4	1.8	
Unexposed	2.3	2.28	3.75	2.1	2	2	1.75	4	2.25	
% TBSA	0.072		0.038	0.07	0.008	0.181	0.049	0.024	0.383	0.033
<20	2.2	2.1	2.1	2.1	1.7	2	2	4	2.3	
>20	1.6	1.5	1.5	1.6	2.1	2	1.7	4	2.1	
Surgery	0.132		0.12	0.10	0.10	0.35	0.192	0.251	0.10	0.01
Yes	2	1.7	1.8	1.7	1.8	1.9	1.7	4	2.1	
No	1.9	1.8	1.9	2.1	2	2.08	1.87	4	2.25	
Scarred	0.035		0.05	0.02	0.02	0.24	0.030	0.133	0.25	0.04
Yes	2	1.8	1.9	1.9	1.8	1.9	1.7	4	2.2	
No	2.4	2.1	2.2	2.2	2.6	2.3	1.7	4	2.2	

Contracture	0.297	0.471	0.39	0.108	0.188	0.012	0.309	0.052	0.041
Yes	1.9	1.8	1.8	2	2	1.9	1.8	4	2.1
No	1.8	1.71	1.7	1.8	1.7	2.0	1.7	4	2
Time since burn	0.012	0.03	0.04	0.01	0.002	0.004	0.153	0.274	0.00
6-12 months	2	1.9	1.8	1.8	1.7	1.8	2	4	3.2
> 12 months	2	1.7	2	2	2	2.0	1.7	4	2.2
Cause of burn trauma	0.203	0.11	0.10	0.02	0.40	0.207	0.445	0.457	0.43
Electric/chemical	1.7	1.8	1.6	2.4	1.7	2.2	2	4	2.2
Scald/Flame	2	2.1	2.0	2	2	1.9	1.	4	1.8
Burn place	0.07	0.14	0.09	0.05	0.41	0.127	0.10	0.04	0.13
Home	2	1.85	1.8	1.8	2	1.9	1.75	4	2.12
Out home/Job	2.4	1.85	2.2	2.2	1.75	2.1	1.85	3.6	2.3
Hospitalization length	0.100	0.02	0.03	0.29	0.04	0.03	0.15	0.26	0.27
<=30DAYS	2	2.1	1.5	2	1.75	2	1.75	4	2.2
>30DAYS	1.8	1.5	2.1	1.8	2	2	1.75	4	2

Table 3 Indicates that Heat Sensitivity related quality of life was influenced by Age, ubudehe category, place of residence, depth of burn, affected body part, scaring, and time after burn. The median quality of life for Heat sensitivity is high in patients less than 18 years than those above 18 years. A higher median score was found in patients with ubudehe category 3 and 4 ($p=0.0404$), patients living in urban area ($p=0.0127$), patient without scar ($P=0.0352$) and burn lasting more than 12 months of burn ($p=0.01207$).

Affect-related quality of life is influenced by Age, ubudehe category, residence place, marital status before and after burn, affected body part, Time since burn and Total Body Surface Area. The higher median Quality of life score was found in patients above 18 years ($p=0.049$), Patients in the 2nd and 3rd ubudehe category ($p=0.001$), patients living in urban area than those in rural area (0.0019), patients living with their partner before ($p=0.047$) and after burn ($p=0.04705$), non-exposed area than exposed area ($p=0.0033$), patients with TBSA of burn less than 20% than those with TBSA greater than 20% and for patients with burn lasting less than 12 months ($p=0.03111$).

Hand function-related quality of life was influenced by degree of burn affected body part TBSA, any surgery after burn type of scar, presence of contracture and time since burn. The higher median quality of life was found in patient with 2nd degree burn than those with 3rd degree ($p=0.0112$) Patient with burn on exposed body part than those with unexposed area ($p=0.0013$), Percentage of body surface area less than 20% than those with TBSA greater than 20% ($p=0.0454$), having a surgery after burn or no surgery ($p=0.01065$); kind of scar or no scar ($p=0.0238$); and time since burn greater than one year than those with burn less than 12 months ($p=0.0443$).

Treatment regimens-related quality of life was influenced by Age, ubudehe category, occupation after burn, residence place, burn depth, affected body part; scar, %TBSA, contracture, cause of burn and burn place. The higher median quality of life was found in patients with age under 18 yrs than those above 18 years ($p=0.041$); Patients in 2nd and 3rd ubudehe category ($p=0.024$), patients who was jobless after burn ($p=0.01372$), those living in urban area (0.0434), those without partners after Burn (0.0221), 3rd degree burn ($p=0.0058$), patients with unexposed burn area (0.04288), Total body surface area less than 20% ($p=0.00467$), those without scar (0.02387), patients with burn contracture ($p=0.01086$), patients above 12 months post burn, burn caused by chemical or electricity (0.0238), and those burnt in working place than home ($p=0.05$).

Work-related quality of life was influenced by age, ubudehe category, place of residence, marital status after burn, affected body part, scarring and time after burn.

The higher median quality of life was found in patients with age less than 18 years ($p=0.022$), ubudehe category 2 and 3 ($p=0.0249$), patients living in urban area ($p=0.0009$), patient without partner after burn ($P=0.0331$), Patients with burn on unexposed area ($p=0.00195$), patients without scar ($p=0.02425$), patients with contracture ($p=0.01888$) and patients with burn lasting more than 12 months of burn ($p=0.00265$).

Sexuality health related quality of life were influenced by education, residence place, marital status, affected body parts, %TBSA, scars, contracture and contracture.

The higher median quality of life concerning sexuality was found in patients with higher education(secondary and university) ($p=0.041$),in patients who reside in urban area($p=0.0059$);inpatients living with their partners before burn ($p=0.0154$),Patients %of TBSA ($P=0.049$),Also patients with scars ($p=0.039$) and patients without contracture($p=0.01299$).

Interpersonal Relationship related Quality of life was influenced by Age, ubudehe category, education level, residence place, Marital status before and after burn, and %TBSA .The higher median quality of life concerning interpersonal Relationship was in patients below 18 years ($p=0.0012$), in patients that belong in the 2nd and 3rd ubudehe category ($p=0.0374$),in patients that attend formal education with secondary and university level ($P=0.0144$), patients that live in urban area ($p=0.0193$);marital status before burn($p=0.0145$);and after burn($p=0.01813$). And %TBSA ($P=0.0241$).

Simple Abilities related Quality of life were influenced by burn depth, affected body part, and presence of contracture or not. The higher median quality of life was in patients with 2nd degree burn ($p=0.0258$); in patients with burn on exposed area ($p=0.0427$) and those with contracture ($p=0.0326$).

Body Image related quality of life was influenced by Age,ubudehe category,residence place,marital status after burn,burn depth,affected body part,%tbsa,scar or contracture and time after burn. The higher median quality of life score concerning body image was found from patients above 18years old($p=0.014$);patients in 2nd and 3rd ubudehe category, patients living in urban area ($p=0.0149$);those without partners after burn ($p=0.0399$);and also influenced equally by 2nd or 3rd degree burn ($p=0.0022$);patients with burn on unexposed area with ($p=0.0408$);patients with %TBSA less than 20%($p=0.0338$);patients who didn't undergo surgery($p=0.01105$) than those underwent surgery; patient who had contracture($p=0.04198$) and with burn lasting less than 12months($p=0.00014$).

CHAPTER 5: DISCUSSION

In this Study we aimed to describe sociodemographic and clinical characteristic of burn survivors, and determine the functional outcome and overall QoL of burn survivors. Furthermore, we wanted to identify the determinants of quality of life in post burn patients. Sixty-three burns survivors followed at outpatient clinic at university teaching hospital of Kigali were included

In this Study we found that flame was the most common cause of burn trauma followed by scald with prevalence of 46% ,40% respectively; majority of burn survivors were female above 18 years and most of them occurred at home on magnitude of 81% .this was similar to the report of American Burn Association . Ola et al. also had similar findings and this may be due to the fact of the increasing use of gas during cooking in our kitchen and low knowledge about careless handling of gas pipes with safety,that we keep most of time in the home place(35).

In regard to functional outcome we found that majority of our patients had contractures (39.7%), followed by hypertrophied scar (20.6%) and a small percentage with amputation. This was in correlation in study done in Egypt where they revealed that less than half of their study patients had contractures and few had hypertrophied scars. This may be due to inefficient number of plastic surgeons and other facilities; we found correlation with contracture and Qol life in burn patients , as it influences mainly sexuality ,simple abilities and body image with a p-value of 0.01, 0.05 and 0.04 respectively(52) (35).

The main findings showed that most burn patients had poor quality of life. The Burn-related QoL score was a proportion of the total sum of participants' responses with the highest possible sum of 160. burn-related QoL scores were classified as; best (>145), good (121– 145), poor (81 – 120) and worst (\leq 80)(49).

In our study, the overall mean quality of life was 94.9, indicating the poor quality of life of burn survivors. Indeed 87% of our patients had poor and worst quality of life and 0% had the best quality of life.our finding is relatively similar to the discovery in Study done by Ola Ebrahim Elsherbinya et al., where they found that burn has the highest negative impact on almost all domains of quality of life as seen in BSHS-B tools(53). Those findings also were supported by the Study done kidal et al. in their Study about the quality of life in the Swedish population. They found the most significant negative impact on quality of life in heat sensitivity,work and body image(54).

In our study we found that there is a statistically significant correlation of Age below 18 years on heat related quality of life on affect , treatments regimen,work ,interpersonal relationship and body image with p-value of 0.016;0.05,0.04,0.02;0.01 and 0.01 respectively and this were relatively not similar to the Study done in Egypt where only statistically significant correlation between Age on health related quality of life was found in hand function and simple ability with a p-value of 0.018 this may be because this Study was done in adult population above 21 years old.(53).

Also in our Study we found that heat related quality of life was significantly influenced by the percentage of total body surface and presence of scar and time since burn with a p-value of 0.04; 0.03 and 0.01 respectively and this was similar to the finding in the Study done by J.oh et al. about temperature sensitivity after burn injury who report that heat sensitivity was associated with burn more than 12%, a scar that requires skin graft and sensitivity was decreasing after 24months after burning.(44)

Residence place influence almost all aspect of quality of life of burns survivors in most of domain, as it was found significant statistical correlation in heat sensitivity ,affect , sexuality ,interpersonal relationship and body image with p-value of 0.01;0.01;0.05 ; 0.01 and 0.01 respectively. This was similar to the study of Ola Ebrahim Elsherbiny et al. where residence influences significant interpersonal relationship,sexuality and heat sensitivity(53)(54).

Similarly other Study found a significant correlation between level of education and quality of life domain , those include interpersonal relationship (p=0.01);sexuality (p=0.04);treatment regimens which correlate to the founding in the egyptian Study where they found treatment regimens with p-value of 0.00, interpersonal relationship 0.006 and sexuality with p-value of 0.006.

In regard to sex our Study found that female were more predominant than male with prevalence of 60.3% and 39.7% which significantly similar comparering with other Study where female also were more predominant.this may be due to the culture in our setting where most of the kichen job is dedicated to female population. Salvador-sanz et al in their Study about quality of life in spanish population female were 45.29% and male were 36.4% and line kvannli et al found female were predominant with 56.2% and male 43.8% (54)(33)(55)(10).

Globally economic status of burn survivors affects the quality of life. Anecdotally in our Study; the population in low social economic status showed low scores especially in regard heat sensitivity, affect, treatments regimen, work, interpersonal relationship and body image. Also we found that LOHS significant impact on quality of life meanly in domain affect ,hand function,treatmentregimens,workandsexualitywithpvalue:0.02;0.03;0.04 and 0.03respectively.this were similarly in the finding from the Study done by Catherine et al. whom revealed that quality of life also affected by length of hospital stay ,surgery after burn occupation after burn and occupation before burn. And this was comparably similar to the finding in the Study done by Salvador sanz et al. in their study where they claim that their burn population is a significant difficulty for social interactions, general activity, and overall psychological health but does not pose a substantial obstacle to physical work or personal care(56)(54);

In this study participant with Age below 18 years has good quality of life compared to those with Age above 18 years in almost all domain of BSHB-B. They had better quality of life on heat sensitivity, treatments regimens,work,interpersonal relationship, and body image.

With regard to the lever of education and QoL , this Study has revealed that there is statistical significance between quality of life on sexuality and interpersonal relationship with p-value of 0.04 and 0.014 respectively and higher median score in those who did secondary school and university than those who didn't have and education and those in primary. The level of education

of burn patients is significantly correlated with the difference in average scores for simple abilities and hand function, interpersonal relationship and sexuality, and treatment regimens. This is similar to the findings in Study by Ola et al., who found a correlation between level of education and overall average score for BSBS-B(35). This may be explained by the fact that those with low education have low economic status and ignorance about the treatment of burn injury.(35)(9)

Regarding occupation and QOL dimensions our finding were not statically significantly ,as we found only occupation before burn was influencing hand function and work and simple abilities and after burn it affect sexuality and body image ,this is not agree with Dyster who demonstrated that nonworking patients had worse burn-specific health, lower health-related quality of life, and more symptoms of posttraumatic stress disorder(52)(56).

Concerning the depth and total body surface area our Study revealed that there is significant correlation between depth ,%TBSA with QoL of burnt in regard to the BSBS-B , as we found that depth influence hand function , treatment regimens ,simple abilities and body image with P-value of 0.01;0.05;0.02 and 0.002 respectively and thus 3 degree influence more than 2nd degree also TBSA influence affect ,treatment regimens ,interpersonal relationship and body Image.thus similar to the finding in Study done in egypt whom proven that patients with burn exceeding 50% have poor quality of life compared to those with TBSA below 50%(35),another study also proved that patient with burn greater than 40% of TBSA have increased debilitated on the BSBS in the affective and body image domains(52)(9).

In regard to the marital status we found significant statistical correlation between patients living with their partners before burn and after burn and those living with their partners had better quality of life that those without in main domain of BSBS-B , with p-value of 0.04,0.03;0.01 and 0.05 On affect, work , interpersonal relationship and body image. as a Swedish study that found patients living with a spouse had significantly improved values for Affect, Hand Function, Treatment Regimens, Sexuality, and Interpersonal Relationships, but not for Heat Sensitivity, Simple Abilities, or Body Image(33).

In relation to the time since burn injury , this Study found that almost all domain of QoL in BSBS were significantly influenced by the timing after burn ,where only sexuality and interpersonal relationship was not significantly influenced by the timing of burn. The current Study found that patients whom was studied and their burn last more than 12 months were better than those with burn less than 12months . With p-value of 0.01;0.03;0.04;0.01;0.02;0.004 and 0.00 for Heat sensitivity,affect ,hand function ,treatments regimens ,work, and body Image sequentially.and the findings are similar to the other Study whom revealed as the time increase since the injury , the QoL of burn patients improve in all corn of BSBS-B.(54)(33) also John et in their Study reveal that returning to work was associated with longer the time since burn injury smaller size of full -thickness and less of personality trait embitterment(29)(42).

CHAPTER 6: CONCLUSION AND RECOMMENDATION

6.1. Conclusion

Based in the finding in our Study, the majority of burn survivors at university teaching hospital of Kigali reported poor or worst health related quality of life. None of the study participants had the best QoL.

Contractures are the most common complication affecting the functional outcome of burn survivors.

In addition there is a strong relationship between quality of life of burns survivors and nonmodifiable factors like Age, sex and modifiable, factors like Length of hospital stay, time since burn, education level, occupation, residence place, marital status, % of TBSA ,type of complication and socio-economic status (ubudehe category). Thus burn survivors are living with stigma of burn scars and suffer too much from the lifelong disability

6.2. Recommendation

- Healthcare providers need to focus on addressing psychological and economic support especially to more vulnerable patients to improve quality of life of burns survivors.
- Training of more plastic surgeons, physiotherapist and increasing burn center and Creation of supporting groups within communities addressing psycho-social concerns of burns survivors
- Further research is needed to understand the epidemiological profile and factors influencing post burn contracture formation in burn survivors at CHUK.

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ANNEXES

Annex 1: QUESTIONNAIRE ON EVALUATION OF QUALITY OF LIFE OF BURN SURVIVORS

I. DEMOGRAPHIC INFORMATION

0. Initials ID: Age:

Sex: Male Female District:

1. Residence: Urban Rural

2. What was your marital status before burn?
Single. Married. separated

3. What is your marital status now?
Single. Married. separated

4. Educational status: None Primary Secondary University

5. Occupational status: Before burn

Farmer Government paying job Private paying job No job

After burn

Farmer Government paying job Private paying job No job

6. Ubudehe category: I II III IV

7. Education before burn: Yes No

8. Education after burn: Yes No

II. Detail about cause and magnitude of burns

1. Cause of burn trauma: Scald flame electric chemical

2. Burn place: Home. Out home Job

23. I no longer hug, hold or kiss.					
24. Sometimes, I would like to forget that my appearance has changed					
25. I feel that my burn is unattractive to others.					
26. My general appearance really bothers me.					
27. The appearance of my scars bothers me.					
28. Being out in the sun bothers me.					
29. Hot weather bothers me.					
30. I can't get out and do things in hot weather.					
31. It bothers me that I can't get out in the sun.					
32. My skin is more sensitive than before.					
33. Taking care of my skin is a bother					
34. There are things that I've been told to do for my burn that I dislike doing.					
35. I wish that I didn't have to do so many things to take care of my burn					
36. I have a hard time doing all the things I've been told to take care of my burn.					
37. Taking care of my burn makes it hard to do other things that are important to me.					
38. My burn interferes with my work					
39. Being burned has affected my ability to work.					
40. My burn has caused problems with my working					

Annex 2: Informed consent

CONSENT FORM

RESEARCH TITLE: Evaluation of Quality of life of burn survivors at University Teaching Hospital of Kigali

PRINCIPAL INVESTIGATOR: Dr BUSOMOKE Denys Fabrice

INSTITUTION: UNIVERSITY OF RWANDA- COLLEGE OF MEDICINE AND HEALTH SCIENCES (UR-CMHS)

I. INFORMATION ABOUT RESEARCH PROJECT

INTRODUCTION

I am Dr. BUSOMOKE Denys Fabrice, Resident in General Surgery year 4. I am inviting you to participate in the research I am conducting. You will have to read carefully the information about this research then your questions will be addressed before signing. Your participation is voluntary and you are allowed to stop at any time if you wish so. Let me know if I speak a word that you don't understand or you are concerned with so that I explain well.

PURPOSE OF RESEARCH

In this Study, we want to assess quality of life of burn survivors at University Teaching Hospital of Kigali and will contribute to new knowledge in its management and help to understand, in general, the particularity of those conditions in Rwanda.

VOLUNTARY PARTICIPATION

Participation in this research is entirely voluntary. Note that refusal to participate will not affect your management and you will receive all services provided in this hospital.

BENEFITS

If you participate in this research, there will be no direct benefit but in the future; you or other patients may benefit from this Study's results.

REIMBURSEMENT

You will not be given any money or gift to participate in this research.

CONFIDENTIALITY

Participants in this Study won't have their identities disclosed. We will maintain the confidentiality of the data we gather for this Study. Your personal information that will be gathered during the research will be stored and kept out of the researchers' sight. In place of your

name, all information about you will be identified by a number. This number will only be known to the researchers. A password-protected computer will be used to keep the soft copies of the data gathering records, and the hard copies will be preserved in a secured box for at least five years.

RESULTS SHARING

We don't plan to share the results of the research to all participants but if you want, you can ask the results on our contacts provided to you. In addition, the results will be shared through conferences and publications.

CONTACTS FOR MORE INFORMATION

This proposal has been reviewed and approved by university of Rwanda-college of medicine and health sciences institutional review board (UR-CMHS IRB), which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find more about the IRB, contact the chairperson, Dr. Stefan Jansen on mobile phone number (+250 784 575 900) or Deputy Chairperson Prof. KATO Jonas NJUNWA (+250 788 490 522). Dr. RUSINGIZA KAMANZI Emmanuel, CHUK Ethic committee Chairperson (+250785466254)

II. CERTIFICATE OF CONSENT

I..... (Participant/ care taker's names/)
voluntarily agree (my participation/participation of my patient) in this research study.

After reading and being explained well the purpose and process of this research:

- ✓ I am aware that, even if I consent to participate right away, I may do so at any point without having any negative effects on my care.
- ✓ I was given written explanations of the Study's objectives and methodology, and I was given the chance to ask questions concerning the Study.

- ✓ I understand that participation involves using data regarding my illness and progress over his follow up.
- ✓ I am aware that taking part in this research won't directly help me.
- ✓ I am aware that all data gathered for this Study will be kept in strict confidence.
- ✓ I am aware that my identity will be kept private in any report on the Study's findings.
- ✓ I am aware that I am free to get in touch with any of the researchers to get more information and explanation.

Principal investigator: Dr BUSOMOKE Denys Fabrice, Resident in General Surgery
(+250785178064)

Supervisors: - Prof NTIRENGANYA Faustin, Associate Professor of Surgery

Senior Consultant General & Plastic Surgeon, Head, Department of Surgery

Tel: 0788732667, Email: fostino21@yahoo.fr

Signature of research participant	

-----/-----/-----	
(Participant's name)	Date

I believe the participant is giving informed consent to participate in this study.	
-----/-----/-----	
Signature of researcher	Date

ANNEX 3: IRB approval



UNIVERSITY OF
RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES
DIRECTORATE OF RESEARCH & INNOVATION

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 9th /March /2022

Dr Busomoke Deny Fabrice
School of medicine and Pharmacy, CMHS, UR

Approval Notice: No 182/CMHS IRB/2022

Your Project Title "*Quality Of Life of Post Burns Survivors at Kigali University Teaching Hospital*" has been evaluated by CMHS Institutional Review Board.

Name of Members	Institute	Involved in the decision		
		Yes	No (Reason)	
			Absent	Withdrawn from the proceeding
Prof Kato J. Njunwa	UR-CMHS	X		
Prof Stefan Jansen	UR-CMHS	X		
Dr Brenda Asiimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS		X	
Prof Munyanshongore Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district	X		
Prof Gishoma Darius	UR-CMHS			X
Prof Donatilla Mukamana	UR-CMHS			X
Prof Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Dr Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josee	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol during the IRB meeting of where quorum was met and revisions made on the advice of the CMHS IRB submitted on 7th March 2022, **Approval has been granted to your study.**

Please note that approval of the protocol and consent form is valid for **12 months.**

Email: researchcenter@ur.ac.rw

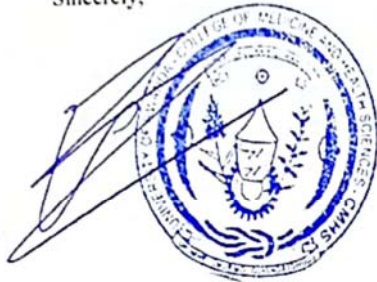
P.O Box 3286 Kigali, Rwanda

www.ur.ac.rw

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrolment of participants.
3. All consent forms signed by subjects should be retained on file. The IRB may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the IRB in a timely fashion and before expiry of this approval
5. Failure to submit a continuing review application will result in termination of the study
6. Notify the IRB committee once the study is finished

Sincerely,



Date of Approval: The 9th March 2022

Expiration date: The 9th March 2023

Assoc. Prof Stefan Jansen
Ag. Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

