

**DESCRIPTION OF FACTORS ASSOCIATED WITH BURN  
INJURIES AMONG PAEDIATRIC ADMITED IN SURGICAL  
WARD IN KAMPALA INTERNATIONAL UNIVERSITY  
TEACHING HOSPITAL IN BUSHENYI  
DISTRICT WESTERN UGANDA.**

**EPUWAT REMIGIO  
DCM/0004/151/DU**

**A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF  
ALLIED HEALTH SCIENCES IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE AWARD OF THE  
DIPLOMA IN CLINICAL MEDICINE AND  
COMMUNITY HEALTH AT KAMPALA  
INTERNATIONAL UNIVERSITY  
WESTERN CAMPUS**

**DECEMBER, 2017**

**DECLARATION**

I declare that, this report was my original work and has never been submitted to this university or any other institution of higher learning for any academic award. I hereby submit it in partial fulfillment for the award of a Diploma of Clinical Medicine and community Health of Kampala international university Western campus.

**EPUWAT REMIGIO**

Registration Number: DCM/0004/151/DU

Signature.....

Date: .....

## **APPROVAL**

This research report under the title ‘the description of factors associated with Burn injuries among Paediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District western Uganda’ was done under my supervision and was submitted for examination purpose with my full approval as the supervisor.

**NAME: Mr. FASEUN YUSUF**

**SIGNATURE..... DATE.....**

## **DEDICATION**

I dedicate this document to my beloved sponsor, Madam Josephine Thornton, Mr Omuse Peter, my beloved Grandparents, Epuwat Remigio and Akello Rose, not forgetting my Uncles Epuwat Paul, Epuwat James and Okeya Stephen for psychological, emotional, financial and moral support they accorded me without which this course and dissertation would have remained a dream. May the Almighty God bless you.

I also dedicate it to my dear pastors; Ologe Aloncious, Amani Patrick, Akisa Elizabeth, Akitwi Margret for their prayer and Encouragement throughout my Education.

## **ACKNOWLEDGEMENT**

First and foremost I thank the almighty God for the gift of life and his abundant Grace to reach up to this level. Glory be back to Him.

My sincere gratitude goes to my beloved sponsor; Madam Josephine Thornton and the Rotary team from Petaluma valley in California for your tireless support since way back in primary up to date, you are the greatest gift I will ever have, thank you for your support, prayers and encouragement. May the almighty God bless you.

My sincere appreciation and thanks goes to the management of Kampala International University for giving me a chance to undergo this noble training as a clinician.

Recorded appreciation to my supervisor Mr Yusuf for his tireless efforts, guidance, encouragement and dedication in making sure that I understand the research process well.

Heartfelt gratitude to my dear Pastor Amani Patrick and all my uncles and aunts for your support, prayers and encouragement in making me pursue the course.

To all who assisted me in one way or the other I say thank you may the Almighty God bless you all.

## TABLE OF CONTENTS

DECLARATION .....	i
APPROVAL .....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABBREVIATIONS AND ACRONYMS .....	viii
OPERATIONAL DEFINITIONS.....	ix
ABSTRACT .....	x
CHAPTER ONE.....	1
INTRODUCTION .....	1
1.1 Back ground.....	1
1.2 Problem statement.....	2
1.3 OBJECTIVES OF THE STUDY .....	3
1.4.1 General objectives.....	3
1.4.2 Specific objectives.....	3
1.5 Research questions.....	3
1.6 Scope of study.....	4
1.7 Justification.....	4
1.8 Conceptual framework .....	5
CHAPTER TWO .....	6
LITERATURE REVIEW .....	6
2.0 Introduction.....	6
2.1 Demographic characteristics.....	6
2.1.1 Age .....	6
2.1.2 Gender .....	6
2.2 Socioeconomic factors.....	6

2.2.1 Household income levels .....	6
2.2.2 Crowded household living conditions .....	7
2.2.3 Illiteracy of the parents. ....	7
2.2.4 Care givers that are not real parents of the child.....	7
2.3 ENVIRONMENTAL FACTORS .....	8
2.3.1 Flammable clothing .....	8
2.3.2 Cooking setup within reach of children.....	8
2.3.3 Large families .....	8
2.3.4 Single parents.....	8
2.3.5 Health infirmities:.....	9
CHAPTER THREE.....	10
METHODOLOGY .....	10
3.0Introduction.....	10
3.1 Study area .....	10
3.2 Study design.....	10
3.3 Study population .....	10
3.4 Sample Size Determination .....	11
3.5 Inclusion and Exclusion Criteria.....	11
3.5.1 Inclusion .....	11
3.5.2 Exclusion .....	12
3.6 Data Collection methods .....	12
3.7 Data analysis and presentation.....	12
3.8 Data quality assurance .....	12
3.9 Ethical Considerations.....	12
CHAPTER FOUR.....	13
RESULTS.....	13

4.0 Introduction.....	13
4.1 THE DESCRIPTION OF SOCIAL DEMOGRAPHIC DATA.....	13
4.1.2 Age of the pediatric .....	15
4.2 Factors associated with burns .....	16
CHAPTER FIVE .....	19
(DISCUSSION, CONCLUSION & RECOMMENDATIONS).....	19
5.0 Introduction.....	19
5.1 The description of socio demographic findings.....	19
5.1 Factors associated with burn injuries .....	20
5.2 CONCLUSION.....	20
5.3 RECOMMENDATIONS.....	21
REFERENCES.....	22
APPENDIX .....	24
APPENDIX I: DATA SHEET.....	24
APPENDIX II: BUDGET .....	25
APPENDIX IV: WORK PLAN.....	26
APPENDIX IV: MAP OF BUSHENYI DISTRICT SHOWING THE STUDY AREA.....	27

## **ABBREVIATIONS AND ACRONYMS**

<b>AIDS</b>	Acquired Immune Deficiency Syndrome.
<b>HIV</b>	Human Immunodeficiency Virus.
<b>MDGs</b>	Millennium Development Goals.
<b>NGOs</b>	Non-Governmental Organizations.
<b>(OPD)</b>	Outpatient Department
<b>UNICEF</b>	United Nations International children Emergency Fund
<b>WHO:</b>	World Health Organization
<b>UDHS.</b>	Uganda Demographic and Health Survey
<b>PHC</b>	Primary health care
<b>KIUTH</b>	Kampala International University Teaching Hospital
<b>Ug.shs</b>	Uganda shillings
<b>UBPSI</b>	Uganda Burns and Plastic Surgery Institute

## **OPERATIONAL DEFINITIONS**

### **Burns**

Injuries to the body caused by hot liquids, fire, electricity or chemicals

### **Challenge**

Difficulty in carrying out a particular event or method. Electricity, sunlight or nuclear radiation  
Awareness:

### **First-degree or superficial burns**

Are defined as burns to the epidermis that result in a simple inflammatory response. They are typically caused by exposure of the unprotected skin to solar radiation (sunburn) or to brief contact with hot substances, liquids or flash flames (scalds).

### **Injury**

An injury is defined as —the physical damage that results when a human body is suddenly subjected to energy in amounts that exceed the threshold of physiological tolerance or else the result of a lack of one or more vital elements, such as oxygen the energy in question can be mechanical, thermal, chemical or radiated.

### **Knowledge**

Fact, information, and skills acquired by a person through experience or education.

### **Practice**

Ability to carry out a particular event habitually.

### **Second-degree or partial-thickness burns**

Result when damage to the skin extends beneath the epidermis into the dermis. The damage does not, however, lead to the destruction of all elements of the skin.

### **Superficial second-degree burns**

Are those that take less than three weeks to heal? Deep second-degree burns take more than three weeks to close and are likely to form hypertrophic scars.

### **Third-degree or full-thickness burns**

Are those where there is damage to all epidermal elements including epidermis, dermis, subcutaneous tissue layer and deep hair follicles. As a result of the extensive destruction of the skin layers, third-degree burn wounds cannot regenerate themselves without grafting.

## ABSTRACT

The study was carried out in Kampala International University Teaching Hospital in Bushenyi District western Uganda from January 2016 to December 2016 to determine the description of factors associated with Burn injuries among pediatric admitted in surgical ward. The admissions book on the surgical ward were reviewed and from the records department of KIUTH, the information was retrieved using a data collection sheet designed according to the specific objectives and the questionnaire. Collected data were tallied, and analyzed using SPSS. The data collected was presented in form of Frequency tables.

Majority of the paediatric were within the age group of (3-5) years and the least were of age group (9-12). More too that many were females accounting to 63.6% and male accounted to 36.4%. Most of these paediatric were normal and under parental care. Many of the paediatrics home had (4-7) members and (1-3) members. Most of these families were from rural areas and most of the burns were scalds accounting to 50%, followed thermal burns accounting to 31.8%, electric burns were 11.4% and lastly chemical burns accounting to 6.8%. The depth of these burns were majorly partial accounting to 77.3% and mixed accounting to 22.7%. These injuries were mostly accidental and least were suicidal. Most of these burns were got from their parents' home and many burns were acquired from kitchens. The burns were mostly on upper limbs of the body and lower limbs. Most of the parents delayed seeking medical attention since they took mostly these intervals that is (21-24) hours, (25-48) hours.

In conclusion, the study finally found out that burns are important public health problem in Bushenyi especially in children 5 years and below where the description was highest and associated with the ruthlessness of clinical types and time of the burns. Many burns were scalds and thermal burns. It was further found that females were more likely to get burns than males. The need to study further the use of inappropriate first aid materials in burns in relations to short term outcomes would be highly required to inform the policy makers in the district on the outcome and thus develop a possible public health intervention in the community. Therefore the research recommend KIUTH, health workers and the district at large to deeply sensitize and employ health education of communities on measures to prevent burns especially in children.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Back ground.

Skin is the largest living human organ that protects the human body from various environmental stresses. When injuries occurs and the skin layer is affected either due to physical, chemical or other type of injuries then it limits the human body's ability to protect itself from environmental stresses. Since the skin barrier properties are compromised(Proksch et al., 2008) alternative measures are needed to protect the open wounds. Recently, burns have risen to be a major cause of morbidity and mortality in low and middle-income countries. Burns account for 1% of the global burden of diseases(Elsous, 2016), cause more than 7.1 mil-lions injuries, the loss of almost 18 million disability-adjusted life years (DALYs), and more than 265,000 deaths worldwide annually(WHO, 2014). Moreover, burns are ranked 4th among all injuries (Peck et al, 2011). Burns cause considerable morbidity and mortality and result in substantial physical, psychological and economic loss.

Annually, the precise number of children suffering from burn injury is unknown (Burd, 2005). But the estimated were 1300 peditrics children reported to die from the burn injury in south Africa, while over 20year period at a major American peditrics burns Centre 145 children died (William, 2009). Pediatric burn injuries in sub Saharan Africa are common and often lead to devastating consequence. The current status of burn care, the lack of infrastructure and the traditional methods of treatment, farther contribute to the unsatisfactory status of overall burn management, prevention and rehabilitation of burns survivors in Africa(Albertyn, 2006). It's revealed that the highest number of pediatric admissions is found in Sub Saharan Africa(Cairns BA, et al, 2013). According to WHO, its estimated that, between 18,000 and 30,000 pediatric aged 5years die annually of fire related injuries(Nierkerk, 2007).

The Uganda Burns and Plastic Surgery Institute (UBPSI) was established in 2003 as a Public-Private Partnership organization where the Ministry of Health, Mulago Hospital, Makerere University College of Health Science, Interplast Holland, and Interplast Uganda jointly work together for the plight of burns care and prevention and reconstructive plastic surgery especially for people who cannot afford proper treatment. UBPSI aims to improve the care of burns

patients, to perform plastic surgery, to create awareness about prevention and treatment of burns, and to train medical staff and paramedics in these fields. The year 2010-2011 has come to pass, but not without lessons to us, with which we forge ahead to face the next year. UBPSI has continued to grow in depth of care with more patients with severe injuries surviving and returning to their societies. Due to repairs on the plastic surgery ward, which lasted 3 months, fewer elective patients were cared for in this segment. On the clinical front, burns from hot liquids continue to lead as a cause for admissions, and children are still the biggest population to suffer. Areas outside Central Kampala have continued to be the commonest source of patients who get admitted(Uganda Burns and Plastic Surgery Institute' (2011)).

In Uganda, Burn injury is among the common causes of childhood injury and results in morbidity and mortality. Childhood burn injuries have been a problem for a long time( Mugisha, 2002-2007). Burn injuries account for 11% of all childhood injuries. Data were collected for over 12 months (August 2004 to July 2005). Over 380 pediatric were included, with the central region registered more patients constituted 45%. Ratio of male to female was 1.3-1. Over 50% of patients had serious injury, 88% of pediatric burned in their own homes in spite of adult presence, 54% were burned while playing.

## **1.2 Problem statement.**

Despite the efforts by Uganda Burns and Plastic Surgery Institute (UBPSI) on prevention of burns, the main challenge still remains the funding to run the Burns Unit. Though the overtime donors have reduced on the funds they provide for this noble cause. Finding alternative sources of funding proved to be difficult due to the credit crunch and donor fatigue (UBPSI, 2014).

Burn injury is among the common causes of childhood injury and result in morbidity and mortality in Uganda. Childhood burn injuries have been a problem for a long time (Mugisha, 2002-2007). Burn injuries account for 11% of childhood injuries. Data were collected for over 12months (August2004 to July 2005). Over 380 pediatric were included, with the central region registered more patients constituted 45%. Ratio of male to female was 1.3-1. Over 50% of patients had serious injury, 88% of patients burned in their homes in spite of adult presence, 54% were burned while playing time(Mugisha, 2002-2007).

Mortality and Morbidity from burns are strongly associated with poverty, low household income, crowded household living condition, low maternal condition, unemployment, flammable

clothing, walking bare foot, cooking utensils within reach of children, epilepsy, blindness, deafness.(Asia, n.d.). Children constitute 75% of the burn victims seen in hospitals in and around Kampala. 5% of all surgical operations done in Mulago hospital and Rubaga hospital respectively are related to burn injuries.

### **1.3 OBJECTIVES OF THE STUDY**

#### **1.4.1 General objectives.**

To determine the description of factors associated with Burn injuries among pediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District western Uganda from January 2016 to December 2016.

#### **1.4.2 Specific objectives.**

- I. To determine the description of Burn injury among paediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District western Uganda from January 2016 to December 2016.
- II. To determine the factors associated with burn injury among paediatric admitted in surgical ward from January 2016 to December 2016 in Kampala International University Teaching Hospital in Bushenyi District western Uganda.

#### **1.5 Research questions.**

- I. What is the description of Burn injuries among paediatric admitted in surgical ward from January 2016 to December 2016 in Kampala International University Teaching Hospital in Bushenyi District Western Uganda?
- II. What are the factors associated with Burn injuries among paediatric admitted in surgical ward from January 2016 to December 2016 in Kampala International University Teaching Hospital in Bushenyi District Western Uganda?

## **1.6 Scope of study.**

The study will majorly concentrate on the description of factors associated with burn injuries among paediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District Western Uganda. However, complications due to burn injuries among paediatric will not be covered in this prospective study.

## **1.7 Justification.**

The study aims to assess description of burn injuries among paediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District Western Uganda. There is currently less information about burn injuries among paediatric in Uganda.

The findings from this study will provide information to the stake holders about the description of the factors associated with burn injuries among paediatric admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District Western Uganda and will help the mothers or caretakers to know the predisposing factors like crowded household living conditions, flammable clothing, cooking utensils within reach of children and thus have them avoided.

## 1.8 Conceptual framework

### Independent variables

#### Socio demographic factors

1. Age of the pediatric
2. Gender of the pediatric
3. Education of parents
4. Family income
5. Population of homes
6. Parental care

#### Clinical factors

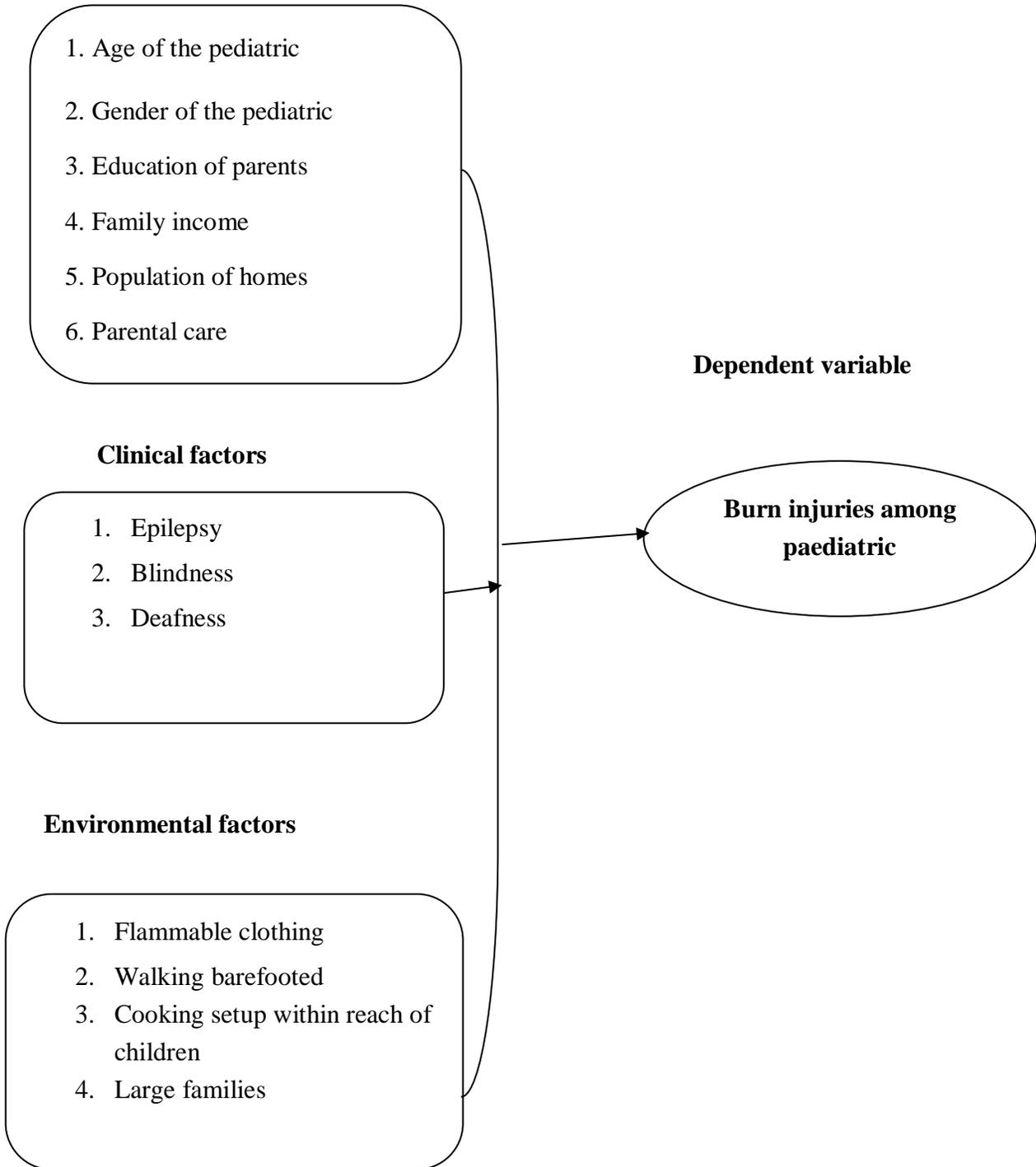
1. Epilepsy
2. Blindness
3. Deafness

#### Environmental factors

1. Flammable clothing
2. Walking barefooted
3. Cooking setup within reach of children
4. Large families

### Dependent variable

**Burn injuries among  
paediatric**



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

Burn injuries in Children are worldwide and its description is associated with a number of factors. Some literature exists on this global occurrence and it is reviewed in accordance to research objectives.

#### 2.1 Demographic characteristics

##### 2.1.1 Age

The age range most commonly affected, independent of country and status, was from birth to four years of age (Parbhoo, 2010) in South Africa, Burn injury incidence is particularly high for toddlers and infants, for boys, and for African children (Niekerk, 2007)

##### 2.1.2 Gender

Globally, the majority of children burnt are boys with a ratio of around 2:1 to girls (Agbenorku, 2013) other studies too show that males are burnt twice as often as girls of the same age (Parbhoo et al., 2010) this is in agreement with a study done in Nigeria (Fadeyibi et al., 2011) so males are more at risk. However, being female or male is not something important to predict burns mortality in children in Ghana (Agbenorku *et al.*, 2013)

#### 2.2 Socioeconomic factors

Surveys by the World Health Organization showed that low and medium income countries accounted for up to a total of 95% of the 238,000 annual global deaths from thermal burns (Fadeyibi et al., 2011). Burns accounted for 38.7% of all pediatric admissions in the Gambia one of the countries in such category. (Parbhoo et al., 2010) In Uganda, burns constituted 18% of all unintentional childhood injuries presenting at a paediatric unit (Nelson, 2016) literature points out the following socioeconomic factors.

##### 2.2.1 Household income levels.

This is considered high risk for burns in Children (Niekerk, 2007) the reasons for this is that, these families cannot afford advanced cookers or heaters, and water needs to be boiled and food

cooked, thus boiling of liquids in pots and pans, that are often placed on unstable cooking stones, and then placed on the ground to cool. (Delgado et al., 2002) a study in Tanzania reported poor architectural design of the cooking places with open fires at floor levels and sometimes in the open place(Justin-Temu et al, 2008) other studies report that, the incidence of burn commonly occurred when parents, in an attempt to find work, left children unattended, unsupervised or in the care of other children(Rayner et al, 2011) Nevertheless, In Ethiopia, burn injuries were more common among the middle and high income (59/660) than in the low-income families (26/645)(Nega, n.d.)

### **2.2.2 Crowded household living conditions**

Throughout Africa the incidence of burns has increased due to poverty; illiteracy; urban migration; overcrowding; and the establishment of slum areas and shanty towns that have minimal safety measures and are generally unfit for human habitation(Rayner et al., 2011) and this in line with a study in Kenya that pointed extended family life (Howe et al, 2006), traditional lifestyles consuming foods while sitting on the floor; transporting hot liquids in buckets and pots; Sterilization of milk by boiling rather than pasteurizing resulted in burns in many rural areas, these predispose to falling into a hot container(Rayner et al., 2011)

### **2.2.3 Illiteracy of the parents.**

Many parents store petroleum in their households, and poor management of gas cookers which tend to catch fire(Rayner et al., 2011). In developed families, the widespread use of microwave ovens increased the risk of scald burns in children, ready access to these ovens posed a significant risk for scalds in children as young as 18 months, who could open the door and remove the hot contents(Rayner et al., 2011) Educating parents, particularly mothers to be aware of high-risk activities of children may reduce the incidence of burns in children(Nega, 2011)

### **2.2.4 Care givers that are not real parents of the child.**

A more recent study in North India, concluded that, the relation of the child to the household head is a great risk, Children who were not a son or daughter of the household head had an increased risk for burn injuries (Dhopte, 2017) this is in support of the study by the University of California, that children under the care of care takers that are not their real parents tend to have an increased risk to burn injuries(Lofberg, 2012) In a study in Ethiopia, There was a higher incidence of burns in the families with employed heads of household(Nega, 2011.). These leave

overworked house maids in care of the children, thus risky. Other vulnerable groups such as children of asylum seekers those living in high-income countries but born to foreign parents(Story, 2008)

## **2.3 ENVIRONMENTAL FACTORS**

### **2.3.1 Flammable clothing.**

Studies in Iraq, shows that, the majority of burn injury occurred in Spring 362 (27.7%) and 352 (26.9%) in winter, but the frequency of burn injury decreased in Summer 298 (22.8%) in and 295 (22.6%) in autumn( Gerontology, 2017).

In Africa, Studies show that changes in dressing styles in developed countries have reduced clothing ignition burns, wearing closely fitting clothes may reduce clothing ignition burns(Nega, n.d).

### **2.3.2 Cooking setup within reach of children**

These accounts for a big percentage of fire accidents(Howe et al., 2006) Most families have low level cooking places the attract toddlers thus accidents(Rayner et al., 2011) this worsened by lack of child supervision, where parents leave the children in care of the elder siblings(Nelson et al, 2010)

### **2.3.3 Large families.**

In developing countries, where overcrowded informal housing settlements and lack of access to utilities pre- dominates, when a pot or vessel of boiling liquid on a fire, or gas stove at ground level, is knocked over, injuries are prone.(Parbhoo et al., 2010) the extended family lifestyle in most cultural setups account for the large families(Fadeyibi et al, 2011) there is less supervision of the children, some of whom are under their elder siblings' care( Niekerk, 2007).

### **2.3.4 Single parents.**

Singles parents is another predisposition to burns in Children(Agbenorku et al., 2013) Some studies have also reported a higher female mortality of burns injuries(Agbenorku et al., 2013) in other studies, in Ethiopia, reported that lower incomes and crowding also increased the risk of burns.(Delgado et al., 2002)

### **2.3.5 Health infirmities:**

Diseases like Epilepsy predispose many to injuries including burns(Nelson Mwangi Muriu, 2016) Blindness on another hand was also reported in some studies(Howe et al., 2006) other studies report that Deafness when one is warned cannot hear say fire alarm, smock detectors(Dhopte et al., 2017; Rayner et al., 2011) in Asia, studies reported that Arthritis as another predisposition to Burns (Asia, n.d.)

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction.**

This chapter discussed and elaborated the study design, study population, sample size and sampling techniques, data collection methods and instruments and finally data analysis techniques.

#### **3.1 Study area**

Kampala International University Teaching Hospital was located in the heart of Ishaka Bushenyi in western Uganda about 360 km west of Kampala city and 50km west of Mbarara town. The major economic activities include farming crops like millet, bananas, beans, cassava etc. and rearing of animals, trade in retail and whole sale, KIUTH was surrounded by many primary and secondary schools and tertiary institutions like Kampala international university. Banyankole, Bakiga, Bakonjo, and Batoro were suspected to be the major tribes in the region. Most people attending the Hospital, were mostly from rural areas of Bushenyi and other neighboring districts

#### **3.2 Study design**

A retrospective analysis of facility-based cross-sectional data from KIUTH teaching hospital records from (January 2016 to December 2016) was conducted to determine the description of factors associated with Burn injuries among children under 12 years admitted in surgical ward in Kampala International University Teaching Hospital in Bushenyi District western Uganda (KIUTH).

#### **3.3 Study population**

The study included all children under 12 years who were attending surgical ward at KIUTH from January 2016 to December 2016

### 3.4 Sample Size Determination

All children under 12 years attending Surgical ward were selected according to Krejcie and Morgan (1970) (*Appendix II*), for a population (N) of 50 children on average, the sample size for the given population (S) was 48 respondents

Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

### 3.5 Inclusion and Exclusion Criteria

#### 3.5.1 Inclusion

Children less than twelve years of age with burn wounds that were admitted in the wards during the study period was studied.

### **3.5.2 Exclusion**

Children admitted for other conditions other than burn injuries, and those whose files missing important information according to the study concept, were excluded.

### **3.6 Data Collection methods**

The admissions book on the surgical ward were reviewed and from the records department of KIUTH, the information was retrieved using a data collection sheet designed according to the specific objectives.

### **3.7 Data analysis and presentation**

Collected data were tallied, and analyzed using SPSS. The data collected was presented in form of Frequency tables.

### **3.8 Data quality assurance**

Data Confidentiality was strictly adhered to, by using Age and Gender rather than using their names in the data collection sheet.

### **3.9 Ethical Considerations**

Upon approval of the proposal, an introductory letter from the school of Allied Health sciences was obtained and submitted to Executive Director of KIUTH.

## CHAPTER FOUR

### RESULTS

#### 4.0 Introduction

This chapter presents analysis from burn injury paediatric admitted in surgical ward in KIU teaching hospital in Bushenyi district western Uganda from January 2016 to December 2016. These provided results on the description of socio demographic data and information on the burn.

#### 4.1 THE DESCRIPTION OF SOCIAL DEMOGRAPHIC DATA

##### Age of the pediatric n=44

	Age group	Frequency	Percent
Valid	0-2	12	27.3
	3-5	21	47.7
	6-8	8	18.2
	9-12	3	6.8
	Total	44	100.0

##### Gender of the pediatric

	Sex	Frequency	Percent
Valid	Male	16	36.4
	female	28	63.6
	Total	44	100.0

##### Parental care

	reply	Frequency	Percent
Valid	yes	27	61.4
	no	15	34.1
	Total	42	95.5
Missing	System	2	4.5

	reply	Frequency	Percent
Valid	yes	27	61.4
	no	15	34.1
	Total	42	95.5
Missing	System	2	4.5
Total		44	100.0

#### Population of pediatric home

	population	Frequency	Percent
Valid	1-3	11	25.0
	4-7	26	59.1
	8-12	5	11.4
	above 12	1	2.3
	Total	43	97.7
Missing	System	1	2.3
Total		44	100.0

#### Location of the pediatric

	location	Frequency	Percent
Valid	Rural	28	63.6
	urban	16	36.4
	Total	44	100.0

#### Child's condition

	condition	Frequency	Percent
Valid	normal	37	84.1
	Blind	2	4.5
	epilepsy	5	11.4

	condition	Frequency	Percent
Valid	normal	37	84.1
	Blind	2	4.5
	epilepsy	5	11.4
	Total	44	100.0

From the tables above, majority of the paediatrics were within the age group of (3-5) years accounting to 47.7%, followed by (0-2) years accounting for 27.3%, (6-8) years and (9-12) years accounted to 18.2% and 6.8% respectively. More to that majority were females accounting for 63.6% and male accounted to 36.4%. Most of these paediatrics were normal accounting to 84.1%, epilepsy accounted to 11.4 % and lastly blindness with 4.5%. These pediatric were under parental care since it accounted to 61.4% and only 34.1% were not cared by their parents.

Many of the paediatrics home had (4-7) members accounting to 59.1%, followed by (1-3) members were 25.0%, (8-12) members and above 12 member were 11.4% and 2.3% respectively. Most of these families were from rural areas accounting to 63.6% and urban were 36.4%.

#### 4.1.2 Age of the pediatric

##### Statistics

n=44

age of the pediatric

N	Valid	44
	Missing	0
Mean		2.0455
Median		2.0000
Mode		2.00
Std. Deviation		.86144

The mean age of the children was 2 years and the SD (standard deviation) was 0.86

#### 4.2 Factors associated with burns

##### Type of a burn

	Type of burn	Frequency	Percent
Valid	Scalds	22	50.0
	Electric	5	11.4
	Thermal	14	31.8
	Chemical	3	6.8
	Total	44	100.0

##### Depth of the burn

	Depth	Frequency	Percent
Valid	Mixed	10	22.7
	Partial	34	77.3
	Total	44	100.0

##### Mode of the injury

	Mode	Frequency	Percent
Valid	Accidental	29	65.9
	Homicidal	4	9.1
	Suicidal	2	4.5
	not specified	9	20.5
	Total	44	100.0

##### Location place for the burn

	Home place	Frequency	Percent
--	------------	-----------	---------

Valid	parent's home	24	54.5
	relatives' home	10	22.7
	neighbors' home	10	22.7
	Total	44	100.0

**Body part burnt**

	Body part	Frequency	Percent
Valid	head/neck	3	6.8
	Torso	7	15.9
	upper limbs	22	50.0
	lower limbs	12	27.3
	Total	44	100.0

**Place of sustaining a burn**

	Burning place	Frequency	Percent
Valid	Kitchen	22	50.0
	living room	11	25.0
	Bathroom	3	6.8
	Outside the house	6	13.6
	Total	42	95.5
Missing	System	2	4.5
Total		44	100.0

**Body part burnt**

	Body part	Frequency	Percent
Valid	head/neck	3	6.8
	Torso	7	15.9

upper limbs	22	50.0
lower limbs	12	27.3
Total	44	100.0

**Time taken before seeking medical care**

	Delay time	Frequency	Percent
Valid	0-4	2	4.5
	5-8	2	4.5
	9-12	2	4.5
	13-16	2	4.5
	17-20	1	2.3
	21-24	11	25.0
	25-48	14	31.8
	>48	10	22.7
	Total	44	100.0

From the tables above most of the burns were scalds accounting to 50%, followed by thermal burns accounting to 31.8%, electric burns were 11.4% and lastly chemical burns accounting to 6.8%. The depth of these burns were majorly partial accounting to 77.3% and mixed accounting to 22.7%. These injuries were mostly accidental accounting to 68.9%, some were not specified accounting to 20.5%, and homicidal were 9.1% and lastly suicidal accounting to 4.5%.

Most of these burns were got from their parents' home accounting to 54.5%, relatives' homes and neighbors' homes accounted to accounted to 22.7%. Many burns were acquired from kitchens accounting to 50.0%, living rooms 25.0%, outside the house 13.6% and lastly from bathroom accounted to 6.8%. The burns were mostly on upper limbs of the body accounting to 50.0%, followed by lower limbs accounting to 27.3%, torso were 15.9% and lastly head/neck 6.8%. Most of the parents delayed seeking medical attention since they took mostly these intervals that is (21-24) hours, (25-48) hours, and greater than 48 hours after the injuries had occurred accounting to 25.0%, 31.8%, and 22.7% respectively.

## CHAPTER FIVE

### (DISCUSSION, CONCLUSION & RECOMMENDATIONS)

#### 5.0 Introduction

This chapter provides discussion on the above results, draws the conclusions and recommendations including the demographic data with attention encircled on the study objectives and information about the burns.

#### 5.1 The description of socio demographic findings

In this study majority of the pediatric were within the age group of (3-5) years accounting to 47.7%, followed by (0-2) years accounting to 27.3%, (6-8) years and (9-12) years accounted to 18.2% and 6.8% respectively. The mean age of the children was 2 years and the SD (standard deviation) was 0.86. And of these, majority were females accounting to 63.6% and male accounted to 36.4%. This agrees with Uganda Burns and Plastic Surgery Institute' (2011) report where majority of the patients were below five years of age and were females. In another study where there were 115 burn cases that fulfilled the inclusion criteria and admission criteria at Gulu university teaching hospital out of the total 130 cases of burn admission for the 2 year study period. The socio-demographic characteristics of the patients with majority of the patient being those 10 years and below, females were the majority and mostly came from Gulu municipality. The modal age group of burnt patients was (1-10) years. The majority of patients were in the age group of 1-10 years. More to that, similar findings to those that were seen in children in south eastern Nigeria(Okoro, 2009) where the incidence of burns among the patients was inversely related to their age. Okoro, (2009) suggested that, more burns occur in this age group due to adventurous nature of the children during the first decade of life which exposes them to burns more often than any other age groups. This he thought may not be unrelated to the fact that children between 1 and 2 years, particularly males, were very active and explorative, yet with minimum ability to recognize hazards. Hence, they are more prone to accidents generally.

In addition to the above, this study revealed that most of these pediatrics were normal accounting to 84.1%, epilepsy accounted to 11.4 % and lastly blindness with 4.5%. These pediatric were under parental care since it accounted for 61.4% and only 34.1% were not cared

for by their parents. Many of the pediatrics' home had (4-7) members accounting to 59.1%, followed by (1-3) members were 25.0%, (8-12) members and above 12 member were 11.4% and 2.3% respectively. Most of these families were from rural areas accounting to 63.6% and urban were 36.4%.

### **5.1 Factors associated with burn injuries**

In this study most of the burns were scalds accounting to 50%, followed thermal burns accounting to 31.8%, electric burns were 11.4% and lastly chemical burns accounting to 6.8%.

Similar findings were found in Gulu hospital were most burn were caused by hot water and hot porridge (Scalds) ( Muriu, 2013). More to this Uganda Burns and Plastic Surgery Institute' (2011) reported also that, the main cause of burn injuries are over 70% hot fluids (boiling water and porridge) followed by flames, which are a result of cooking on open fire and use of paraffin lamps and the majority of patients (67%) had burns up to 30% of total body surface area (TBSA).

Furthermore this study revealed that, the depth of these burns were majorly partial accounting to 77.3% and mixed accounting to 22.7%. These injuries were mostly accidental accounting to 68.9%, some were not specified accounting to 20.5%, and homicidal were 9.1% and lastly suicidal accounting to 4.5%. Most of these burns were got from their parents' home accounting to 54.5%, relatives' homes and neighbors' homes accounted to accounted to 22.7%. Many burns were acquired from kitchens accounting to 50.0%, living rooms 25.0%, outside the house 13.6% and lastly from bathroom accounted to 6.8%. The burns were mostly on upper limbs of the body accounting to 50.0%, followed by lower limbs accounting to 27.3%, torso were 15.9% and lastly head/neck 6.8%. Most of the parents delayed seeking medical attention since they took mostly these intervals that is (21-24) hours, (25-48) hours, and greater than 48 hours after the injuries had occurred accounting to 25.0%, 31.8%, and 22.7% respectively.

### **5.2 CONCLUSION**

In conclusion, the study finally found out that burns are important public health problem in Bushenyi especially in children 5 years and below where the description was highest and associated with the ruthlessness of clinical types and time of the burns. And majority of these burns were scalds and thermal burns. It was further found that females were more likely to get

burns than males. The need to study further the use of inappropriate first aid materials in burns in relations to short term outcomes would be highly required to inform the policy makers in the district on the outcome and thus develop a possible public health intervention in the community.

It further showed that the factors contributing to the increase of burns were age (0-5) years, sex (females), population of the family (4-7), location of the paediatric (rural).

### **5.3 RECOMMENDATIONS**

Therefore researcher puts up the following recommendation

- I recommend that mothers with paediatrics aged between 0-5 years and female should be informed on how their children are more entitled to burns.
- I also recommend KIUTH health workers and the district at large to deeply sensitize and employ health education to the communities on measures to prevent burns especially in paediatrics and their first aid.

## REFERENCES

- Agbenorku, P., Agbenorku, M., & Fiifi-Yankson, P. K. (2013). Pediatric burns mortality risk factors in a developing country's tertiary burns intensive care unit. *International Journal of Burns and Trauma*, 3(3), 151–8. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23875121> <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC3712406>
- Asia, E. (n.d.). Children and burns.
- Delgado, J., Ramírez-Cardich, M. E., Gilman, R. H., Lavarello, R., Dahodwala, N., Bazán, A., ... Lescano, A. (2002). Risk factors for burns in children: crowding, poverty, and poor maternal education. *Injury Prevention*, 8(January 2000), 38–41. <https://doi.org/10.1136/ip.8.1.38>
- Dhopte, A., Tiwari, V. K., Patel, P., & Bamal, R. (2017). Epidemiology of pediatric burns and future prevention strategies — a study of 475 patients from a high-volume burn center in North India. *Burns & Trauma*, 1–8. <https://doi.org/10.1186/s41038-016-0067-3>
- Elsous A, Elsous A, Ouda M, Mohsen S, Al-shaikh M, Mokayad S, et al. Epidemiology and outcomes of hospitalized burn patients in Gaza strip: a descriptive study. *Ethiop J Health Sci* 2016;26:9–16. <http://dx.doi.org/10.4314/ejhs.v26i1.4>.
- Fadeyibi, I. O., Mustapha, I. A., Ibrahim, N. A., Faduyile, F. I., Faboya, M. O., Jewo, P. I., & Ademiluyi, S. A. (2011). Characteristics of paediatric burns seen at a tertiary centre in a low income country: A five year (2004-2008) study. *Burns*, 37(3), 528–534. <https://doi.org/10.1016/j.burns.2010.09.015>
- Gerontology, M. O. J. (2017). Characteristics of Burn Injury and Factors in Relation to Infection among Pediatric Patients, *I*(3), 1–11. <https://doi.org/10.15406/mojgg.2017.01.00013>
- Howe, L. D., Huttly, S. R. A., & Abramsky, T. (2006). Risk factors for injuries in young children in four developing countries: The Young Lives Study. *Tropical Medicine and International Health*, 11(10), 1557–1566. <https://doi.org/10.1111/j.1365-3156.2006.01708.x>
- Justin-Temu, M., Rimoy, G., Premji, Z., & Matemu, G. (2008). Causes, magnitude and management of burns in under-fives in district hospitals in Dar es Salaam, Tanzania. *East African Journal of Public Health*, 5(1), 38–42. <https://doi.org/10.4314/eajph.v5i1.38975>
- Løfberg, K., & Farmer, D. (2012). Pediatric Burn Injuries in the Developing World.
- Muriu, N. M. (2016). description and Factors Associated With Injuries Among Children Aged

12 Years and Below Admitted To Hospitals in Nyeri County , Kenya.

Muriu, N. M., Karanja, S., Gura, Z., Karama, M., & Kibachio, J. (n.d.). description and factors associated with injuries among children aged 12 years and below admitted to selected hospitals in Nyeri County , Kenya-2013.

Nega, K. E. (n.d.). Original article Epidemiology of burn injuries in Mekele Town , Northern Ethiopia : A community based study, 1–8.

Niekerk, A. Van. (2007). *Paediatric burn injuries in Cape Town , South Africa Context , circumstances , and prevention barriers.*

Okoro PE, Igwe PO, Ukachukwu AK (2009). Childhood burns in south eastern Nigeria. *Afr. J. Paediatr. Surg.* 6:24-27

Parbhoo, A., Louw, Q. A., & Grimmer-Somers, K. (2010). Burn prevention programs for children in developing countries require urgent attention: A targeted literature review. *Burns*, 36(2), 164–175. <https://doi.org/10.1016/j.burns.2009.06.215>

Peck MD. Epidemiology of burns throughout the world. Part I: Distribution and risk factors. *Burns* 2011;37:1087–100. <http://dx.doi.org/10.1016/j.burns.2011.06.005>.

Proksch, Ehrhardt, Johanna M. Brandner, and Jens-Michael Jensen. “The Skin: An Indispensable Barrier.” *Experimental Dermatology* 17.12 (2008): 1063–1072. Wiley Online Library.

Rayner, R., Prentice, J., Rayner, R., & Prentice, J. (2011). Paediatric burns : A brief global review, *19*(1), 39–46.

Story, V. S. (2008). Adapted from the Children of Fire web site (<http://www.firechildren.org>, accessed 9 June 2008)., (June).

‘Uganda Burns and Plastic Surgery Institute’ (2011).

‘( UBPSI ) ANNUAL REPORT 2013-2014 Together we can Prevent Burns in Uganda ’’ (2014).

WHO. WHO Health Estimates 2014 Summary Tables: Deaths and Global Burden of Disease. 2014.

**APPENDIX**

**APPENDIX I: DATA SHHEET**

<b>Age</b>	<b>Gender</b>	<b>Home population</b>	<b>Parental care</b>	<b>Child's condition</b>	<b>Location</b>	<b>Type of burn</b>
<b>Mode of the injury</b>	<b>Depth of the burn</b>	<b>Location for the burn</b>	<b>Place in house for the burn</b>	<b>Body part burnt</b>	<b>Delay time for seeking medical care</b>	

**APPENDIX II: BUDGET**

<b>RESEARCH ITEM</b>	<b>TITLE</b>	<b>QTY</b>	<b>UNIT COST (USH)</b>	<b>TOTAL (USH)</b>
<b>Stationery</b>	Ream of paper	1	15,000	15,000
	Punching machine	1	10,000	10,000
	Stapling machine	5	5,000	5,000
	Box files	2	3,000	6,000
	Ball point pens	5	500	2,500
	Box of Sticky notes	1	3,000	3,000
<b>Internet</b>	Data bundles			20,000
<b>Printing</b>	Questionnaire	80	100	8,000
	Proposal	3	15,000	45,000
	Final report	4	20,000	80,000
<b>Remuneration</b>	Supervisor stipend	1	50,000	50,000
	Data analysis team and Reviewers pay	5	10,000	50,000
	lunch			50,000
<b>Communication</b>	Airtime			20,000
<b>TOTAL</b>				<b>314,500/=</b>

**APPENDIX III: WORK PLAN**

ACTIVITY	MONTS					
	Aug-Sept	September	October	November	December	December
Proposal writing						
Approval of research proposal						
Data collection						
Data analysis						
Dissertation write up						
Report submission						

