IS SUICIDE PREVENTABLE IN GULU DISTRICT?

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Declaration

I declare that this thesis is the product of my work alone and it has not been submitted in part or whole to any Institution world over for any award.

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Dedication

I dedicate this work to my wife Joan who supported me morally and with prayers, to my sons Brian, Mike and Bonny, to my daughters Betty and Barbara who took over home chores while I was away, to my grandsons Baraka and Ateni-Telwa and to my granddaughter Tushiya who are an inspiration for my life.

This work should also inspire you to reach your full potential with hard work while trusting in God from whom all providence comes.

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List of Abbreviation

CDC-DVP	Center for Disease Control-Division for Violence Prevention and Control
GOU	Government of Uganda
HC	Health Center
IDPs	Internally Displaced Peoples' Camp
LRA	Lord's Resistance Army
NGOs	Non Governmental Organizations
PHC	Primary Health Care
PTSD	Post Traumatic Stress Disorder
VH	Village Helper
VHT	Village Health Team
WHO	World Health Organization

Abstract

Background: Suicide and suicide attempts are prevalent in the general population but methods of their prevention are varied and not transferable between countries. This study investigated the feasibility of using Village Helpers in the control and prevention of an epidemic of suicides and suicide attempts in two Districts in Northern Uganda.

Methods: This was a quasi-experimental and prospective and observational study that compared the outcome of suicide prevention utilizing Village Helpers and Primary Health Care providers in Gulu District to involvement of Primary Health Care providers only in Amuru District. Health Worker per health unit in both Gulu and Amuru Districts and a Village Helper per parish in Gulu District were recruited and trained separately in the management of psychosocial problems, suicide ideation and suicide attempts so as to apply in their locality. The two groups were supported with functional referral system, posters and supervisory visits. Data on suicides and suicide attempts were collected at parishes and health centers using Village Helpers and Primary Health Care providers respectively. Additionally, the method of training for VHs was evaluated using a pre- and posttest design and reported.

Analysis: The analysis comprised of general descriptive and inferential statistics, analysis of variance for quantitative data and frequencies and themes for qualitative data.

Results: The results showed reduction of suicide and suicide attempts by 36.8% and 64.9% respectively in Gulu district and 33.3% and 57.3% in Amuru District. It also showed cyclic annual trend with two peaks; November-January and May-July. Village Helpers were instrumental in identifying and providing psychosocial support in respect of a majority of illness and psychosocial problems encountered at house level.

Conclusion: The involvement of Village Helpers in the control and prevention of suicide behavior in combination with Primary Health Care providers is superior to the use of Primary Health Care provider alone.

Recommendation:

a. The use of trained Village Helpers alongside Primary Health Care providers for every Village for prevention of a range of morbidities at primary care level.
b. Village Helpers concept be used in Global Mental Health campaign to reduce mental health treatment gap
c. Change of policy to enable mental health medicines to reach lower health units to support referrals and
d. Change policy to decriminalize suicide in Uganda.

CHAPTER ONE

1.1 Introduction

Management of mental health problems in traditional settings like Northern Uganda utilizes cultural concepts, ideas and practices (Abbo, 2011; Silove & Psychol, 2013). Western type of management of mental illness is deemed foreign and counseling services are rudimentary and is not available to the majority. Here in Gulu, psychiatric emergencies may go undetected and unattended largely due to inadequate mental health service delivery. Two psychiatrists, a psychologist, seven psychiatric clinical officers and ten psychiatric nurses provided mental health services to the population at the time of this study. Additionally the notion of psychological morbidity and its consequences are not quite understood by the majority in this region. Health policy and health system issues seem to remain in print and mental health matters are relegated to low priority.

Northern Uganda's conflict resulted in mental ill-health epidemic that saw an increase in the prevalence of common mental health problems and suicide (Vinck et al., 2007). The question is whether mental health problems of this magnitude can be addressed owing to the limited mental health resources in this area. This study was designed to answer whether suicide in Northern Uganda could be controlled or prevented using a combination of trained Village Helpers and Primary Health Care providers.

1.2 Background

Suicide is common world over (WHO. 2017). World Health Organization reported that 20 million people attempt suicide yearly and that about 900,000 die by suicide. The rates vary considerably from 0 per 100,000 in some developed countries to 100 per 100,000 in Asia and peaking in Russia. The world suicide rate is averaged at 16 per 100,000. Trends of suicide show

an increase of 60% in the last 45 years with patterns which previously associated the old persons now changing to affect the young people of below 45 years. The male to female suicide deaths ratio was reported as 17.4 males to 10.6 females (WHO, 2017).

Suicide and suicide attempts can be prevented (Nock, et al. 2009; Ono, Sakai, et al. 2013; WHO, 2017). Efforts to prevent suicides in developed countries rely on enabling legislation, effective health service provision, presence of adequate mental health workforce, the population of general health practitioners, effective public health measures e.g. pesticides and gun control and a wealth of other resources (Vijayakumar, Prikis & Whiteford, 2005). When these factors are not fully developed and operational, impediments to suicide prevention are many and common as in Uganda (Ovuga & Larroque, 2012). Other challenges include but are not limited to increase in mental illness, poor state of psychiatric services, drug abuse, chronic illnesses, domestic violence and interpersonal factors (Mekonnen & Kebede, 2011; Kizza, Hjelmeland, Kinyanda & Knizek, 2012; Vaughan, 2012).

There is evidence that majority of people who take their lives are not under specialist mental health care and that half have not had contact with general practitioners (Owen, Owen, Lambert, Donovan, et al, 2009). Goldney and Fisher (2008) reported that people with depression and suicidal ideation do not benefit from mental literacy programs and that their treatment seeking behavior did not change much. These findings above including another finding that life is viewed as private, personal and can be terminated at will (Ovuga, et al. 2005), present challenges to suicide prevention. Other challenges reported were of concealing diagnosis of mental illness and fear of stigma and discrimination (Lasavia, Zoppei, Van Bortel, Bonetto, Cristofalo, et al. 2013). To take care of these challenges suggestions are that different approaches to suicide prevention which take care of remote locations and resource constrains be developed and tested (Beautrais & Mishara, 2008).

Recent debate in post-conflict interventions to reduce mental ill health including Post Traumatic Stress Disorder (PTSD), suicide, and other psychosocial problems seem to favor community approaches (Silove, Steel & Psychol, 2006; Owen, Owens, et al. 2009, Kizza, Hjelmeland, Kinyanda & Knizek 2011). Thornicroft, Alem, Dos Santos, Barley, et al. (2010) recommended a top-bottom approach that balances the closure of hospital beds with the planning and execution of community mental health services. Ovuga, Boardman, and Wasserman (2007) showed that Primary Health Care providers when trained can treat mental illness at the District Health Units. While top-bottom approach is recommended, Ovuga, et al., (2007) study suggests a bottom up approach- that is from lower health centers to referral hospitals, can be effective as well. These approaches may reduce the rate of suicides associated with mental illness and other chronic conditions that come to health centers. However it was reported that Primary Health Care workers may be less capable of identifying and preventing suicide cases that come to them (Scheeder, Reynders, Andriessen & Van Audenhove, 2010). On the other hand conditions that may cause suicide or suicide attempts happen in households and in communities likely to be distant from the health centers. The scenario may evolve so fast as to require preventers to be close by.

Northern Uganda is recovering from a 20 year civil strife between Government of Uganda (GOU) and Lords' Resistance Army (LRA) that saw the population forced into Internally Displaced Peoples (IDP) Camps dotted throughout Acholi sub-region and other neighboring regions. The war was termed the worst human catastrophe of our time or the neglected war because of its impact on every fabric of survival of the victims. Dolan (2011) describes this period as of 'social torture' as it was invariably used to send signals to would be rebel communities to learn from. She cited violence, debilitation and humiliation as the cardinal methods used in the 'social torture' resulting in what may be called psychological epidemic

namely; experiencing high levels of mental, neurological, behavioral, and substance use disorders. Poverty, food insecurity, and landlessness including orphan-hood and other relational discords are among the social problems in the post conflict era.

1.3 Circumstances leading to the study

The incidences of suicide increased from year 2007/8 in Gulu District when the Internally Displaced Peoples Camps (IDPs) were closed and people returned to villages of origin. Unpublished data from rapid assessment in January to November 2012 found that the average suicide rate per sub-county was above 20 per 100.000. District average was 35 per 100,000 and Koro sub-county had the highest rate with 113 per 100,000. Death by suicide is prohibited by law in Uganda (Uganda Constitution, 1995) but continues to be committed more so now in Gulu District, a post conflict setting. There has been difficulty in accurately assessing and documenting the magnitude of suicide (Knizek, Kinyanda, et al., 2011). Records for suicide cases were kept separately by police, community development officers and health centers especially those that are associated with emergency admission. Lack of centrally collating and storing suicide behavior information thus concealed the magnitude of the problem. There has been need to ascertain the magnitude of suicide in Gulu District to aid planning preventive strategies.

Health service delivery in Gulu District is still inadequate comprising of four hospitals each serving a population of 96,400. There are two Health Center Four (HC IV) each serving a population of 192, 800, fourteen Health Center Three (HC III) each serving 125,200 persons and 48 functional Health Centre Two (HC II) each serving 8,033 persons. There are 10 parishes without HC IIs. Doctor patient ratio stands at 1:19,984, Nurse Patient ratio at 1:2,677 and doctor nurse ratio at 1: 71. Drugs and sundries stock outs at these health units were estimated at 50%

(Gulu Local Government, 2012). There were three psychiatrists and two psychologists based at Gulu University at the time of this study. There is a mental health unit based at Gulu Regional Referral Hospital (GRRH) with ten psychiatric nurses and psychiatric clinical officers combined. This number is too few to respond to the mental health needs of a post conflict population, including providing suicide preventive services. Adjunct to Primary care providers the study proposed use of village helpers to beef up the workforce for meaningful mental health service provision during the intervention.

1.4 Problem Statement

The World Health Organization (WHO), report globally changing rates and trends of suicide behavior. World average suicide rate is 16 per 100,000 tending towards young persons and males leading females 17.4:10.6 (WHO, 2011). The WHO estimated the age-standardized suicide rate in Uganda as 19.5:100,000 (WHO, 2014). Rapid assessment in Gulu district showed rates of 113: 100,000 in Koro sub-county with district average of 35:100,000. These figures did portend a public health concern calling for an intervention. However, the magnitude of suicides had not been known, the risks factors involved had not yet been determined and documented. Additionally it was not certain if preventive initiatives could prevent and control suicide within a setting outside specialist care. Reports on mental health literacy conducted in communities with aims of improving help seeking does not benefit those with depression and those who were suicidal because of hopelessness and reduced problem solving skills (Goldney & Fisher, 2008). Acute and chronic use of alcohol on the other hand causes victimizations that abet suicide (Kizza, Hjelmeland, Kinyanda & Kizek, 2012).

This study investigated whether enhancing the community's ability to listening to distress calls can prevent suicide behavior. However, persons working with distressed individuals tend to

acquire increased distress levels themselves. For this reason, it is important to prepare helping individuals with skills to protect themselves from harm (Trippany, White Kress, & Wilcoxon 2004). It is also important to assess and monitor them for any psychological difficulties within the intervention period.

This study was conducted in addition to show how preventive initiatives can benefit those who are psychologically inhibited from seeking care, especially those with underlying mental illness or other psychosocial challenges. Such preventive initiatives need be motivational (pro life), well monitored and evaluated. The general wellbeing of individuals implementing the intervention needed to be assessed and monitored as well.

1.5 Research questions

The study questions were;

1- What was the magnitude of suicide and associated factors in Gulu District?
2- Could suicide be prevented in Gulu District considering post conflict challenges with health service delivery?
3- Could non-medical rural community members when trained prevent suicide in their community?
4- What would be the effect of suicide prevention work on the mental wellbeing of trained Village Helpers during the intervention period?

1.6 General Objective

The general objective of the study was to determine if suicide can be prevented with limited resources and to determine if non-medical rural community members, when trained could prevent suicide in their locality and stay psychologically healthy.

1.6.1 Specific objectives

1. To assess the prevalence of suicide in Gulu District
2. To assess risk and associated factors of suicide in Gulu District
3. To test whether Village Helpers when trained could be effective in preventing suicide within their locality.
4. To monitor the psychological health of the Village Helpers during the intervention.

1.7 Hypothesis

Social and public health framework for suicide prevention acknowledges that suicide can be prevented using multidisciplinary approaches to mitigate suicide risk factors (Vijayakumar, et al. 2005). Suicide and suicide attempts result from many interacting contextual, cultural and interpersonal variables. The hypothesis here therefore is that suicide can be prevented in Gulu District using non-medical community members trained in suicide prevention methods utilizing the concepts of contextual, cultural and interpersonal factors.

1.8 Significance

This study was designed to answer whether suicide in Northern Uganda could be prevented or controlled amid post conflict psychosocial challenges. The study was necessitated within the context of suicide epidemic seen in 2013-2014 that called for immediate professional response and intervention. It is noted that communities rely on themselves as social capital and on social networks for survival. Any death by no means ruins this capital base and disrupts the functioning of the social networks (Ovuga, et al. 2005). Suicide brings with it stigma and discrimination to the affected families thus reducing their ability to enjoy the social networks and social capital for survival. Most suicide behaviors result from relationship breakdown and the communities are

best placed to understand and correct this anomaly. In the 20 year war, social networks were disrupted by displacement, maiming, killings and abductions. Disruptions to these regenerating networks de-motivate survivors of war from living productive and fruitful life. This study served to provide avenues through which communities could strengthen social relationships for social capital and for survival by mitigating factors that promote suicide. It was also hoped that the effects of preventing one suicide attempt would cascade to prevent other suicides and improve problem solving abilities of the communities in the catchment area. The findings augment the skill mix necessary to support understaffed mental health service delivery.

The study also provided for Village Helpers concept that has been tried elsewhere that any member of the community can be trained to successfully participate in a range of developmentally oriented community interventions. This concept can be adapted by local and international NGOs. The study findings can be used for policy formulations towards suicide prevention and towards de-criminalization of suicide. Uganda as country still criminalizes suicide and suicide attempts and does not have a suicide prevention policy. This thesis is a resource that will be kept in the Libraries for reference. Papers published will add to knowledge by contributing to the gaps this study has identified. These papers provide a basis for further research. The work will be submitted as a requirement for an award of Doctor of Philosophy of Psychology of Gulu University.

1.9 The Scope of the Study

This section describes the scope of the study beginning with geographical scope, time scope and contextual scope.

1.9.1 Geographical scope

This study was done in Gulu and Amuru Districts Northern Uganda. Gulu District is in Acholi sub-region (now read as Gulu and Omoro Districts), Northern Uganda 332km by road from Kampala. It extends from 2° 46'54.0 North to 32°17'57.0 East has an area of 3458 km^2. The District has a population of 436,345 people distributed in 127km^2 with projections of 3.3% annual growth rate to 448,999 people by 2003 to 2017 (UBOS, 2016). Amuru District is in Northern Uganda at longitude 02° 50'N and latitude 33° 05'E. It located approximately 60 kilometers (37 miles), by road, northwest of Gulu Municipality, the largest in the sub-region. Amuru was established by an act of Parliament in 2006 and separated from what was Gulu District.

1.9.2 Time Scope

Preparation for this study began in September, 2014. Primary Health providers were trained was in December, 2014 and Village helpers were trained in January, 2015. Data collection on suicide and suicide attempts started in January 2015 and ended December 2016. This time of 24 months was deemed sufficient to evaluate the impact of suicide prevention efforts to explain whether the intervention worked or not.

1.11 Conceptual Framework

Figure 1.1, Conceptual Framework

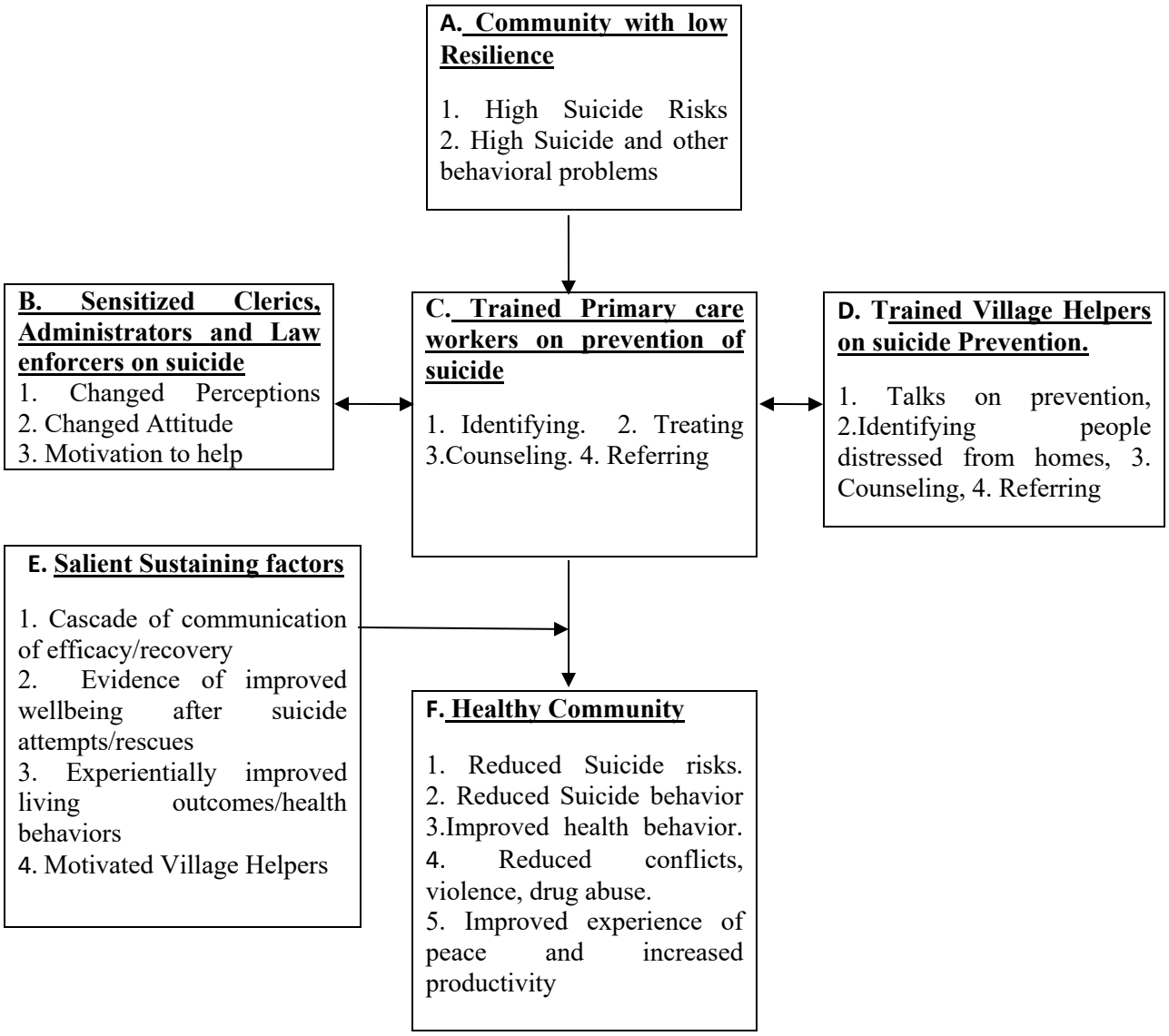

Figure 1.1, shows how the different units of the intervention are related, what they individually do, and the anticipated outcome of such actions on the community with suicide. The framework begins with a community with low resilience, where suicide risks, suicide and behavioral problems were high (Box A). The District administrators, Clerics and law enforcers (Box B), the Primary Health Care workers (Box C) and Village Helpers (Box D) are drawn from the same

community with low resilience. The group in Box B was sensitized about suicide and suicide prevention with a view to create ownership and to follow the operating guidelines. It was also to synchronize communication and support across the different players of the intervention. Box C contained what the health workers were doing to the community additional to daily routine and suicide prevention (identifying, counseling, treating and referring) after training. Box D contained what the Village Helpers did to the community (communicating prevention, identifying people with distress from households, counseling and referring). This combined actions from health workers and Village Helpers including good will from administrators, clerics and law enforcers in Gulu, contributed to create a healthy community (Box F); with reduced death by suicide, reduced suicide attempts, reduced behavioral problems and improved health behaviors. Suicide prevention salient sustaining factors Box G, (cascade of communication of efficacy or recovery, evidence of wellbeing after suicide rescues or attempts, other experiential health outcomes including motivated and energized Village Helpers by the praises they received from the community) reinforced the contributions made by individuals in Boxes B, C and D to transforming the whole community to a healthy one.

1.12 Theoretical Framework

Many theories have been applied to health related behavioral research and to the development of behavioral interventions. Among them are the Health Belief Model (HBM) which proposes that for one to perform a recommended health behavior he/she must believe in the risk and must weigh costs and benefits of the recommended health behavior (Janz & Becker, 1984); the Social Cognitive Theory (SCT) which proposes that for one to adapt a behavior he/she must believe that the outcome outweighs the costs and that there is sense of agency and efficacy in performing that behavior (Bandura, 1977, 1986, 1997); the Theory of Reasoned Action (TRA) which proposes that for a person to perform a given behavior he/she must have a strong intention, an intention

which is controlled by attitude towards performing that behavior and the subjective norm of performing that behavior also rooted in the views of the significant persons (Ajzen & Fishbein, 1980); and the human systems intervention (Chin & Benne, 1976). Human Systems Intervention (HSI) concerns itself with design and implementation of interventions in social setting where adults are confronted with need to change their prospective, attitudes and actions towards a condition of interest (Chin & Benne, 1976) and in this case it is prevention of suicide and suicide attempts. They created the early frameworks for intervention strategies, arguing that an intervention can be informed by coercive, rational, or normative strategies. HSI emphasizes the relationships among individuals, groups, organizations and communities including the environments in which they live. These environments are not limited to built and natural space but include social, cultural, neighborhood, organizational, familial and economic. Environments that are free of toxic contaminants and relatively free from violent conflicts promote health and well-being in a biophysical ways (Christens & Freedman, 2014). Proponents often argue that interveners must be aware of the systemic interactions occurring within a human community, and therefore help its members gain awareness of how their interactions are contributing to the maintenance of ineffective patterns of behavior. Some argue that interventions should be seen as designs intended to augment a human system's capacity to problem solve and learn.

HSI is indicated for practice in the areas of group development, small group leadership, knowledge transfer, diversity management, and community intervention. For example the Village Helpers were trained to help themselves. Realizing that the training helped them to change their attitudes, perspectives and actions, they transferred the knowledge to distressed persons within the community and took leadership to prevent suicide and suicide attempts. HSI is broad, encompasses more variables and is applicable to this study.

CHAPTER TWO

Literature Review

2.1 Overview of suicide behavior

The Global burden of suicide and nonfatal suicide and their contribution to disability adjusted life years (DALYs) is not well known. However, World Health Organization (WHO, 2017) estimated that over one million people commit suicide the world over annually at a rate of one death in 40 seconds. Suicide contributed to 1.4% of world's deaths and that 86% of these suicides are being committed in Low and Middle Income Countries (LAMICs) (WHO, 2008). Cavanagh, Carson, Sharpe, et al. (2003) reported from the review of the psychological autopsies that 91% of suicide completers have a median prevalence of mental illness. This finding seems to complicate intervention initiatives for suicide per se and possibly calls for broader mental health prevention initiatives including initiatives to control other risk factors associated with suicide.

2.2. Theoretical background to suicide behavior

No known causes therefore have been established for suicide behavior in Gulu District. However, there are several theories put forward to explain the causes of suicide behavior. Three big categories of theories have emerged, namely the biological, psychological, and sociological. The biological theories seek to understand how suicide behavior relates to functioning of the human body. Commonly referred are genetic predispositions in identical twins and the low level of neurotransmitters in those who commit suicide (Currier & Mann, 2008). The psychological theories seek to relate functioning of the human mind (thoughts, emotions, behavior) to suicidal behavior. Here people with disturbed emotions like those with depression and/or with psychosis are more likely to indulge in suicidal behavior ((Bostwick & Pankratz, 2000, Palmar, Bostwick & Pankratz, 2005). The sociological theories relate social factors to ill health and suicidal behavior. Here, life and traumatic events tend to dictate who finally engages in suicidal behavior.

Then there is 'Diathesis-Stress Model' (Holmes & Rahe, 1967) which combines biological and psychological perspectives and cites the interaction between genes and a force (stress) that disrupts the mental functioning of an individual and can cause suicidal behavior. A recent theory is 'The Interpersonal Psychological Theory of Suicidal Behavior' that attempts to explain why people commit suicide. The theory proposes that one will commit suicide if she/he has the desire and will to do so. And this desire and will stems from perceived burdensomeness, social alienation, and acquired ability to enact lethal self injury (Van Orden, Witte, Braithwicz, Selby, & Joiner, 2010). These theories are yet to be used to explain suicide behavior in Gulu District.

2.3 Historical background of suicide in Acholi land

The earliest account of suicides and homicides in Acholi land was documented by Paula Hirsch Foster using court records from Acholi District court in Gulu between 1925 and 1954. Her intention was to contribute to a book title 'African Homicide and Suicide' which was later published about 1960 edited by Paul Bohannan, New York, Atheneun. She was able to collect 122 cases of suicide with account of reason for suicide and what means that were used. The reasons for committing suicide were varied. For some, chronic illness resulting to isolation, for others it was dispute, shame for others who could not marry and others had fertility problems. The common means then was hanging by a rope either in a tree or in a house. People who died by suicide at that time were buried like any other dying of natural causes possibly due to lack of religious leanings for Christianity had not spread and taken deep root in Acholi land.

The clan Chief of Patiko Kal named Jeremiah Ajwayo Odong when interviewed listed why people commit suicide. He said *kwong* (swearing), *daa* (quarrelling), *kiniga* (anger or rage), *lewic* (shame), *cen* (curse) and *piny oloyo* (feeling defeated) were the things that happened before one died of suicide. Jeremiah's wife had died of suicide and for her he said she was 'stupid' (*miing*) and she had '*cen'.* In Acholi, people still swear (*kwong)* especially when accused

wrongfully for the things they did not do. When swearing does not help, the person contemplates suicide. Quarrelling *(daa*) is common when there is dispute or misunderstanding. One who is weak and feels defeated may commit suicide. Anger or rage *(kiniga)* came by way of unpleasant actions done towards an individual for which offence is taken. This is commonly seen in young people (boys or girls) stopped from marrying each other, any of whom can commit suicide. Anger or rage *(kiniga)* tends to explain impulsive suicides seen in Acholi land. Anger or rage tends to come suddenly as a result of experience of unpleasant situation which overpowers an individual causing impulsive behavior like suicide. Shame *(lewic)* comes by way individual actions not approved by society e.g. having sex with animals for which society ridicules. Feeling of shame *(lewic)* may explain such suicide. *Ping oloyo* (feeling defeated or hopeless) comes by evaluation of things happening around an individual and when the person concludes he is nothing, has nothing, has nothing to lose (a thwarted perception of self), then the person may commit suicide. Curse *(cen)* were explained as coming by way of being the first to do a forbidden act say killing oneself, or killing innocent person. It is believed that the ghost or spirit of the slain person would torment your lineage by causing multiple suicides until cleansing ceremony is done.

The issue of curses (*cen*) was implicated in most suicides especially for 'Apuranga' and 'Paimol' clans and it continued to their descendents according to Jeremiah. Jeremiah's mother in law was from Apuranga and that explained the suicide of his wife as coming from curse *(cen).* The clan Chief of 'Paimol' had died of suicide and this brought *cen* in the clan. For Jeremiah, acceptable reason for dying of suicide was when one lost all his brothers in war or his family died in house fire. The clan members would say he has joined his brothers or his family for it would be shame to live without them. A girl or a boy would commit suicide if not allowed to marry a person he or she loved and it would be understood. However, Jeremiah confided that no Acholi would allow

another to die of suicide. They would attempt to stop one talking of suicide saying 'don't do it'. Jeremiah had a boy sent to jail for attempting suicide. The boy was compelled with others by government then to work for one month without pay while opening roads around Gulu, a task he resisted and wanted to die for. Other people who attempted suicide but did not succeed explained that they felt 'they did not fit in' for some reason; e.g. 'clan people say I am spoiling people', 'my home is far away' or 'people trouble me' (burdensomeness) were some reasons they provided. However, Foster found the material she collected was unreliable in part because of witchcraft and intra-clan problems which could not openly be discussed by Europeans at the time especially in public forum of court.

2.4. Prevalence of Suicide behavior

The prevalence of suicide around the World varies considerably from 0 per 100,000 in some developed countries to 100 per 100,000 in Asia and peaking in Russia. In Africa suicide rate varies from 5:100,000 as in Egypt to over 20:100,000 as in Ethiopia. The prevalence of suicide in Uganda was first estimated to be 1-2:100,000 (Orley, 1970). In 1982, German conducted a study in Busoga region in Uganda and estimated the prevalence of suicide attempts to be 8.5:100,000 inhabitants. Kinyanda, et al. (2004) through Support to Health Sector Strategic Plan (SHSSP) conducted a baseline survey on prevalence of completed suicide in 14 Districts in Uganda. He reported varying rates ranging from 4.9% in Yumbe to 16.1% in Adjumani but with a life time prevalence of 15.5%. The authors cited ecological factors as contributing to the differences. Bolla (2002) had estimated suicide rates of 99/100,000 and a rate of suicide attempt at 518:100,000 in Adjumani. Ovuga, Boardman, and Wassermann (2005) reported average of 36.1% of life time prevalence suicide ideation for both Bugiri and Adjumani Districts, however Adjumani, a post-conflict district had higher rate of 46.6%. Kinyanda et al. (2009) reported a suicide rate ranging from 15-20:100,000 in Northern Uganda. Current estimates put Uganda at

18.3, Kenya at 17.7 and Tanzania at 16.5 all per 100,000 (WHO, 2017). Prevalence of suicide and suicide attempts continues to rise between and within countries and in varying populations groups and yet universal suicide prevention mechanism is lacking.

In an attempt to understand mental health workers views on criminalization of suicide, Hjelmeland, Kinyanda, & Knizek (2012), interviewed 30 health workers composed of psychologists, psychiatric clinical officers, and psychiatric nurses. They reported that 2/3 of the sample wanted the law abolished reasoning that suicide is a mental health problem. Other wanted the law retained for deterrent purposes while others were ambivalent. The authors recommended efforts to increase awareness among general health workers to screen for suicide and to prevent suicide.

In Gulu too, there is lack official statistics on suicide most probably due to its criminal nature whereby some recording is found in casebooks at police stations. There is evidence that both men and women are committing suicide in Northern Uganda (Kizza, Knizek, Kinyanda, & Hjelmeland, 2012) and the rate is not known. Suicide and attempted suicide still remain criminalized in Uganda thus concealing the magnitude of suicide and suicide attempts.

2.5 Effects of war and the epidemic of suicide in Northern Uganda

In 2006, the guns went silent and people began returning to the villages where they were previously tortured and evicted. This has happened in the context of poor health infrastructure, few de-motivated health workforces and perpetual lack of supplies (Ovuga & Larroque 2012). This phenomenon has not changed much to date.

The unplanned exodus saw the traumatized population deurbanize IDP Camps to villages where they previously met the competing demands from both the rebels and the government army before they relocated to the camps. There is likelihood of re-experiencing of traumatization that

is suspected to be responsible for the high levels of mental, neurological, behavioral, and substance use disorders. Poverty, food insecurity, landlessness including orphan-hood and strained social networks are outcomes of conflict that the population faces.

Studies conducted so far report elevated levels of psychological morbidity. Prevalence figures in a sample of 2585 adults at displacement camps for Post Traumatic Stress Disorder (PTSD) stood at 74.3% and depression at 44.5% (Vinck, Pham, Stover, & Weinstein, 2007). Psychological morbidity in Primary Health care providers who lived in conflict zones was reported as 24% with depression; 38% had anxiety and 50% had PTSD (Oboke, 2012). In vulnerable groups like abducted people, 32% had PTSD (Winkler, Ruf-Leuschner, Ertl, Pfeiffer, et al., 2015) in child soldiers, 33% had PTSD and 36% had depression (Klasenet, Oettingen, Daniels & Adam, 2010) and psychological morbidity among child mothers were reported as high as well. In a comparative study, Oyok & Akello, (2011) found psychiatric morbidity at health centers in conflict settings to be higher than those of non-conflict health centers. Seven years later major depression was reported as 24.7%; 29.2 % for females and 17.0% for males (Mugisha, Muyinda, Malamba & Kinyanda, 2015). Kizza, Hjemelamd, Kinyanda & Knizek (2012) report complication of alcohol use in 16/20 cases of suicide studied in IDPs camps. Follow-up studies in Northern Uganda report different prevalence rates of psychological morbidities in different settings (Winkler, Ruf-Leuschner, Ertl, et. al. 2015; Dokkeddal, Oboke, Ovuga & Ask, 2015a).

This scenario is suspect in causing high levels of attempted and completed suicides in most parts of Northern Uganda, particularly in Gulu District. Other districts in which the public has expressed concern over suicide behavior include Amuru and Nwoya. Although the phenomenon has affected all parts of Northern Uganda, some communities in the region have been less vocal probably due to fear, shame and stigma or discrimination that may follow disclosure (Lasalvia, Zoppi, Van Bortel, Bonetto, Cristofalo, Wahlbeck, et al. 2013).

2.6 The economics of suicide

The cost of suicide falls on everyone in society (Yang & Lester 2007). Suicide robs mankind with labor, families with relatives, siblings with parents and others with friends especially if the deceased was an adult. But young people too, prematurely die of suicide making it the most costly cause of death for those left behind. The costs of suicide include direct, indirect and intangible costs. Direct costs include hospitalization, treatment, burial expenses, police and the Corona investigations. Other costs are from prosecution and imprisonment as in Uganda (Penal Code, 1955). Indirect costs include productivity lost earnings due to premature death, quality of life costs, quality of adjusted life years lost, present value of life lost-true earnings, lost years of disability free life (Yang & Lester, 2007). Intangible costs include human costs-pain, grief, and suffering, value of life not lived and value of being a family and a friend to others (Yang & Lester, 2007). Doessel and Williams (2010) have argued that costs between those who died of suicide and those who were saved from suicide in welfare terms did not favor preventing suicide. However Yang and Lester (2007) argued that suicide should be prevented based on humane considerations and not on the economic cost involved. The debate on the economics of suicide appears to support prevention policy or initiatives that are pro-life as costs of life to self and to social networks cannot be properly determined.

2.7 The traditional notions of suicide

Vaughan (2010) posits that historically Africans had very low rates of suicide. She questioned the observation that Africans were happy people, did not retrospect to suffer from guilt or depression that underlies most suicides; Africans believed that suicide was the works of witchcraft and evil spirits. She asserts that rising rates of suicide in Africa can be attributed to modernization and urbanization which exert pressures on mostly men to provide livelihoods and when they fail they contemplate suicide. People who die by suicide are culturally regarded as

weak and are treated with disdain. Mugisha, Hjelmeland, Kinyanda, and Knizek (2011) reported that in Buganda suicide was perceived as dangerous to family and community and thus people adapt various rituals to distance themselves both symbolically and socially. Reports from consultative meeting of 2014 with communities in Gulu indicate that people who die of suicide bring shame, stigma and contamination to families and clans. These suicide deaths are viewed as a consequence of wrongs previously committed by ancestors. One wrong according to the chief of elders, was subjecting one in your care to die of suicide. "If this happened, suicide would follow one's lineage" he said. The other wrong was buying witchcraft that causes people to die by suicide or tampering with artifacts of another persons' suicide; like carrying a piece of rope or tree on which one hanged; all these are believed to subsequently transmit suicide to descendants. This genesis of *cen* (curse) is still respected by Acholi community and is used to explain away events and situations people do not quite understand.

People who die by suicide are denied traditional burial rites, spiritual sendoff and last funeral rites. Catholics and Protestants preach against suicide behavior and say they are not obligated to attend or participate in burial functions. Suicide and suicide attempts remains criminal act in Uganda (Uganda Constitution 1995).

2.8. Prevention of suicidal behavior

The prevention of suicide per se appears challenging due to numerous risk factors that affect suicide behavior (Rudd, Berman, Joiner, Nock, Silverman, et al. 2006) and due to the many proposed requirements needed for effective intervention (Thornicroft, Alem, et al. 2010). Bergen, Hawton, Waters, Ness, et al. (2012) proposed that prevention of suicide should focus on overall improvements of general individual health by targeting vulnerabilities that increase the risk of natural death. The role of life style i.e. physical activity, diet, smoking (Jacka, Mykletun & Berk, 2012), and economic deprivation (Bergen, et al. 2012) have been added to other risks

like social networks, child abuse, and drugs and alcohol abuse as risk factors for psychological disorders and other non communicable diseases commonly cited as risks for suicide and self-harm (WHO, 2014). Kizza, Knizek, Kinyanda, & Hjelmeland (2012) researching on psychological autopsy of men, who died of suicide, report lost dignity and social value, lack of hope for the family's future, overwhelming family responsibility, and mental illness as circumstances found to have preceded suicide in Northern Uganda. They recommended a multidisciplinary suicide prevention strategy able to align changed roles of both men and women that has evolved during the conflict. Similar recommendation also came from the psychological autopsy study of women who committed suicide in Northern Uganda (Kizza, Knizek, Kinyanda, & Hjelmeland, 2012). In this study the authors report 'no control and no care' including fight for lost roles as having contributed to women's suicides. In another psychological autopsy study which aimed for a link between alcohol and suicide in Northern Uganda, alcohol use was found to have a direct or indirect influence in 16 out of 20 cases sampled (Kizza, Hjelmeland, Kinyanda, & Knizek, 2012). The authors recommend suicide prevention strategy should address the public health problem arising from alcohol use. Van Orden, Witte, Braithwicz, et al, (2010) from discussions on the 'Interpersonal Theory of Suicide' conclude that effective intervention to prevent suicide should target thwarted belongingness and perceived burdensomeness that have been evident as precursors of in suicide behavior globally. The strategy to prevent suicides in Northern Uganda should therefore address multiple risks and concerns raised herein to be effective.

2.9 Suicide prevention approaches

Suicide prevention framework has been classified into three as universal, selective and indicated. Universal prevention concerns programs which target the whole population, while selective prevention target those communities with risk but with no cases of suicides and indicated

prevention target those communities where suicide behavior is prevalent (Manzek & Haggerty, 1994). Newer prevention approaches have used indicated prevention approach but included it in Nested Programs where suicide prevention is included in other social services. This approach has been used commonly by Non-Governmental Organizations (NGOs) while providing psychosocial intervention in post disaster areas. Risk reduction, restrictions of fire arms or pesticides and provision of mental and general health services are known suicide preventive approaches in high income countries (Vijayakumar, Pirkis & Whiteford, 2005c). The Center for Disease Control, Department for Violence Prevention and Control (CDC-DVP) argues that suicide preventive program that promotes human connectedness is seen to improve health and wellbeing (CDC-DVP, 2014). Mental and general health services in Uganda lack suicide prevention policy. This gap can be bridged (as in this study) by using programs that are indicated or nested as appropriate including engaging indigenous community members that can provide care and promote social support and connectedness.

In Gulu District indigenous prevention are rare and has not been documented. However, post-vention methods observed conducted under strict rules has been destroying materials used in suicide like uprooting, cutting and burning trees and burning huts in which one had hanged and filling dams in which people were drowning; then a cleansing ceremony deemed to prevent re-occurrence of suicide in the decedents of those who died by suicide commonly followed each of these activities.

2.10 Challenges to prevention of suicide

Challenges to suicide prevention can be legal, policy, cultural and structural. Legal and policy frameworks are lacking in most low income countries thus relegating the priority of suicide prevention to low priority. Culturally some suicides are supported as there is honor in killing

oneself to atone for one misdeeds as in Japan (Ono, Sakai, Otsuka, Uda et al., 2013), and in the military during times of war one would commit suicide if defeated in a battle. Other cultures find suicide stigmatizing and they condemn it. Some cultures are ambivalent toward suicide as in Mexico (Sloan, 2015). Prevention program (SUPRE) a World Health Organization arm, acknowledged that the major challenges to suicide prevention were lack of awareness, taboo and stigma associated with it. Reliability of suicide certification is lacking making the magnitude of suicides unknown. Recommendation is that any attempt towards prevention of suicide must include these challenges in a culturally accepted manner. Other challenges concerns risk factors which vary between developed and developing countries (Vijayakumar, et al., 2005b) thus deterring transfer of prevention success stories from developed countries to less developed countries. For example gun restriction, a single risk factor, has been seen to reduce suicide in the United States of America (Knox, Litts, Talcot, Feig et al., 2003) but is not transferable to countries without gun ownership policy. Studies that have controlled for multiple risk factors in suicide prevention are rare.

2.11 The ethics of suicide research

When legal obligations are lacking, ethical premises concerning acceptability of suicide research and obligation to intervene may influence research protocols (Mishara & Weisstub, 2005). Doing suicide research is ethically challenging in the areas of obtaining ethical approval, assessing the population, informed consent, confidentiality issues, extent of care and facilitation to the participants from the point of view of ethical committees (Lukeman & Fitzgerald, 2009) . In some cultures, suicide is a taboo which creates barriers to talking about it. In a study done in Buganda, Mugisha, et al., (2011) reported two themes of challenges, community access and expectation challenges. Community access challenges consisted of obstacles such as cultural, legal, informed consent, language and rapport issues while expectation challenges concerned

how to deal with immediate and strategic needs of the community. Other ethical challenges hinge on whether to ignore the plight of bereaved families or not. Bereaved families often view contact with professionals as initially depressing but later agree that the contacts had benefits (Mishara & Weisstub, 2013) suggesting that bereaved families should be professionally assisted to overcome their distress. Ethical challenges can therefore pose difficulty in suicide research and intervention and thus requires applying sensitivity and caution.

2.12 The role of primary health care workers in suicide prevention

Primary health care workers are the first contact point for all ailments that present from the community. They are the entry point where health related information to the community is delivered and they are the source of primary data on health indices from the community they serve. However, due to heavy workload for the few available staff at the facility, many such activities are not adequately covered. However research reports linking usefulness of primary care health workforce to community interventions are available. Ovuga, Boardman, and Wassermann (2007) were able to show that training primary care health workers to participate in suicide prevention and treat common mental illness was effective to reduce the rate of suicide in Adjumani. Ito, Setoya, & Suzuki (2012) have reported an effective model where NGOs trained health care and non-health care staff in post conflict Cambodia and East Timor where mental health resources were destroyed, and found that both category were able to provide residential care using basically psychological approaches rather than medicines. Jenkins, Kiima, Njenga, et al. (2010) have reported on integration of mental health services in to primary care in Kenya also citing additional training provided to primary care health workers to enable them become effective service providers. Additionally they reported the role of supportive supervision as additional input to effective service delivery by primary health care providers. Supportive supervision is rare due to constrain in funding and human resources.

2.13 The role of Community to prevention of suicidal behavior

Community based service or intervention approaches has received support for use in mental health service provision and in suicide interventions. Yet the definition of 'community' is varied. Community can mean a vulnerable group, people living within a catchment area of a town or a service center, rural populace and/or community living with a condition of ill health. Sudipto, Smita, Sujit, Hamid, et al, (2014) evaluated effectiveness of community-based care plus facility based-care against facility-based care for people living with Schizophrenia in India and found the former moderately effective. Ono, Sakai, Otsuka, Uda, Oyama, et al., (2013) evaluated effectiveness of a multimodal community intervention program to prevent suicide and suicide attempts using a quasi experimental design in rural areas with high suicide behavior rates and posted significant results. Community based approaches has been used Hungary to test whether suicide could be decreased in both genders (Szekely, Konkoly Thege, Mergl, Birkas & Rozas 2013) and reported that suicide rate decreased in both genders. In Iran, self-immolation prevention was tested using community based approaches (Ahmadi & Ytterstad, 2007) and found immolation attempts decreased by 57%. However these studies did not show the role of communities in these interventions. In 2009, Owens, Owens, Lambert, Donovan, et al. published a study protocol seeking improve public involvement in suicide prevention by understanding and strengthening lay responses to distress arguing that communities were ignorant about the plight of people who take their own lives. Emphasizing that if the community could read signs of distress they could possibly come to the aid of people contemplating suicide. Community involvement studies are rare possibly due to a myriad of factors.

Like in many Low Income Countries (LICs), literacy rates are low making the uptake of health services utilization poor. According to population and housing census (UBOS, 2014), the literacy rate for Gulu District was 58.7% for males and 41% for females with a national rate at 59%.

Communities with low illiteracy tend to live within traditional systems and use traditional health seeking behaviors for all ailments. However, communities through their leaders and significant persons can be mobilized and trained to act on basic health massages. Ovuga, Boardman, & Wasserman (2005) were able to show that communities could act on suicide messages as a result there was a reduction of suicide rates. They were also able to show that the communities were able to demand for health and thus general health situation improved including mental health. This 'pull demand system' is able to effect positive change on a range of health related problems including suicide behavior.

CHAPTER THREE

3.1 Methodology

This section discusses methods and materials used in the study. It begins the discussion with design, study area, population, sampling, data collection (instruments and procedure) and ethical consideration**.**

3.2 Design

This was a prospective study that used mixed methods; both quantitative and qualitative designs. The main objective of the study used a quasi-experimental design to assess the quantifiable suicide and suicide attempts data (Table 3.1). The study of participants training; design used was pre-test post-test for assessing the impact of training on VHs. The assessment of the reasons for suicides and the reasons for suicide attempts used cross-sectional descriptive design. In suicide autopsy, interviewing was used as method of data collection.

Table 3.1, *Conceptual framework of the quasi-experimental design*

Study Area	**Design**	**District Selection**	**Input**	**Outcomes**
Suicide in Districts of N Uganda	Suicide Control Methodology Quasi-Experimental	Experimental Site, Gulu District	Train HWs + Posters + Supervision	Incidences of Suicide
			Train VHs + Posters + Supervision	Performance of VHs
		Control Site, Amuru District	Train HWs + Posters + Supervision	Incidences of Suicide

Table 3.1 above shows the quasi-experimental design. In this study, Gulu District was selected as an experimental district while Amuru District was a control district. The choice of Gulu District as an experimental site was based on the recommendation from a consultative meeting. The reasoning was that there were reports of surge of suicide in all the sub-counties of Gulu District even if the suicide behavior was rampant in all districts of Acholi sub region.

The inputs were the variables provided to help in the experiment process. Input one: both Gulu and Amuru Districts had Primary care Providers trained in management of mental ill health and suicide prevention, input two: had posters distributed in all Health Centers and input three: had clinical support supervision provided quarterly within the intervention period. This was done to prepare even ground so that the effect of input four: which was Village Helpers could be measured during the process of prevention of suicide behavior. Thus in Gulu District, this additional variable of interest was Village Helpers trained in the identification of mental ill health and management of distress at household level. This study then compared incidences of suicide from experimental Gulu District (now reads Gulu and Omoro after separation) to that of the control Amuru district for a period of 24 months. This was done to test if employing Village Helpers alongside trained Primary Health Care providers was more effective in reducing the burden of suicide behavior than using Primary Health Care providers alone. Primary health care providers alone as a variable was used in Amuru District and evaluated. In this study, the dependent variable was the suicide behavior outcomes (rate attempts and deaths) and the independent variable was the VHs.

In all these processes there could have been contamination effects. Contamination is failure to control the effects of variables of interest from influencing study outcomes in the control district. In this study the effects of VHs was concentrated in Gulu as a control district and did not overlap to Amuru. Other disturbance during the study like massages from media, from leaders and

community based organizations were affecting the two districts equally and was considered a constant in this quasi-experimental study.

The different designs and reasons for using each are detailed here below:

Quasi-experimental designs are frequently used because they are more practical and feasible in intervention research where a large sample, randomization and or availability of control groups are not possible. The design is more suitable for the real world natural setting where variables can be investigated under naturally occurring conditions. It is also useful in longitudinal or prospective studies where everything is left to occur by chance. It is useful in establishing causal evidence not associations (Morgan, 2000: Gribbons & Herman 1997: Robinson, Shannon, Goldenhar & Hale, 2012). Quasi-experimental designs lack randomization which is a signature of Randomized Control Trial (RCT). However quasi-experimental designs provide rich data on process or trends of the variable of interest. Data can then be compared at baseline, midterm and at the end to evaluate trends or the effectiveness of a program.

The pretest and post test designs are rigorous designs for assessing effects of interventions or events on a known sample. The changes between the pretest and posttest are compared to assess the direction of change. It is this direction of change which is valuable in stating if the program or intervention worked or not. In this study, this design was used to evaluate the training of VHs. This evaluation was necessary to assess if the training provided the VHs with psychological healing and motivation to work without pay even beyond the intervention period as suicide behavior is a chronic community problem.

Meanwhile cross-sectional descriptive designs are used to document phenomena and describe it in detail within a specified period of time. In this study this design was used to describe the reasons for suicide and suicide attempts including the study of suicide autopsies.

3.3 Study Area

The study area comprised of Gulu and Amuru districts. The two Districts are found in Northern Uganda and in the same geographical area and with similar human activities. Gulu District had 12 sub-counties but was divided to give rise to Omoro district. Now it has one county (Aswa) and six sub-counties namely Unyama, Paicho, Bungatira, Awach, Palaro and Patiko. Omoro District comprises of Omoro and Tochi counties with six sub-counties namely Koro, Bobi, Lalogi, Odek, Lakwana and Ongako. For the purpose of this study, Gulu will be referred as including Omoro District (Gulu Statistical Manual, 2011).

3.4 Gulu District

Gulu District is in Acholi sub-region located in Northern Uganda 332km by road from Kampala (see figure 1). It extends from 2^{o} 46'54.0 North to 32^{o}17'57.0 East and has an area of 3458 km^2. The District has a population of 436,345 people distributed with density of 127 persons per square kilometer with projections of 3.3% annual growth rate to 448,999 people by 2003 to 2017. The population comprises of 213,400 (49.0%) males and 222,937(51.0%) females (UBOS, 2016). It is bordered by Oyam District in the South, Pader District in the East, Amuru District in West but curves through to the North.

The soil here is described as ferruginous (i.e. sandy in nature) able to support regenerative vegetation of a variety of canopied fire resistant trees. The soil also supports a variety of grass, some growing up to 5 meters. The District receives 1500mm of rain running from April to September peaking in August. The dry spell runs from November to March with temperature ranging from 18^{0}C to 50^{0}C annually (Gulu Local Government, 2012, p20). The climate supports agriculture and livestock farming practiced at peasantry level. Several cash and food crops can be grown in the District e.g. cotton, coffee, tobacco, maize, sesame, beans, fruits, cereals and vegetables. The land supports a variety of wild life and birds. Livestock reared are cattle (local

and cross bread), sheep, goats, and pigs. Fowls kept are chickens (local, exotic breads), ducks, turkeys and some pigeons and domesticated guinea fowls. Administratively, previous colonial administrative structures were maintained but are now decentralized. At the District level, the head of Local Government (LG) is an elected Local Council Five (LCV) chairman, an appointed Chief Administrative Officer (CAO) as accounting officer and Resident District Commissioner (RDC) representing the Central Government. These arrangements are duplicated at the sub-counties with an elected Local Council III (LCIII) as head and the Sub-county Chief doubles as Assistant Chief Administrative Officer (ACAO).

Figure 3.1 Map of Gulu and Omoro Districts showing sub-counties

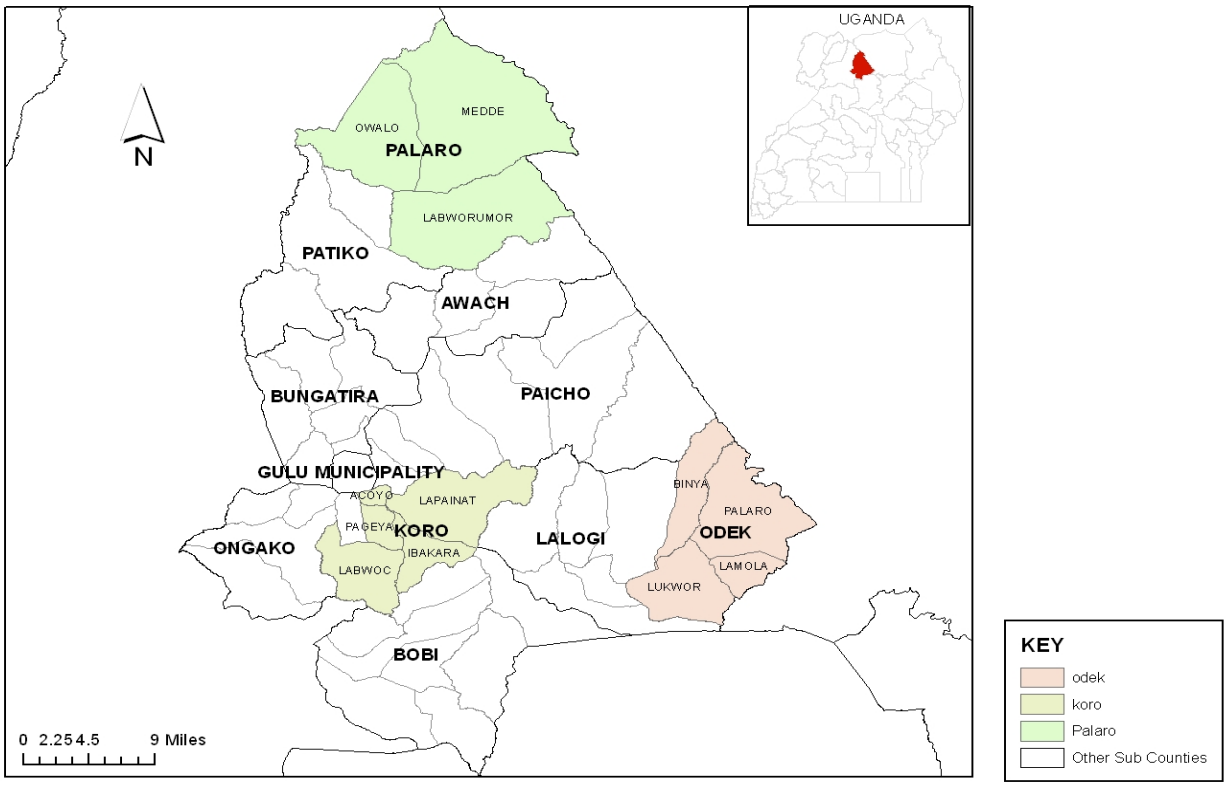

Fig 3.1 shows Gulu and Omoro Districts before they were divided. The map does not show Unyama sub-county which was divided from Paicho sub-county and does not show Lakwana sub-county which was divided from Lalogi sub-county.

Decentralized functions and services from Central Government performed by LG are maintaining community law and order and caring for health, education, environment, and local infrastructure, economics and trade within the jurisdiction.

3.5 Amuru District

Amuru District is in Northern Uganda at longitude 02º 50'N and latitude 33º 05'E. The district Head Quarters (HQ) is located approximately 60 kilometers (37 miles), by road, northwest of Gulu Municipality, the largest town in the sub-region. Amuru was established by an act of Parliament in 2006 and separated from what was Gulu District. The District is bordered by Gulu District to the east, Adjumani District to the north, South Sudan and Lamwo and Kitgum Districts to the northeast, Nwoya District to the south, Nebbi District to the southwest and Arua District to the west. The administrative headquarters of the district at Amuru; a name derived from the sub-county in which it is located. It has an area 3625 km^2 with a population of 186,345 comprising of 91,284 (49%) males and 95,412 (51%) females the population was projected to grow by 2.74% per annum to 195,300 by 2017. The population density is 53.9 inhabitants per square kilometer (UBOS, 2016). The climate and land use is similar to that of Gulu District. The decentralized administrative structure is also similar with that of Gulu District.

3.6 Study Population

This study involved all the people living in Gulu and Amuru Districts during the study period. The population was not categorized by age or gender knowing that even children, regardless of gender, had attempted or died of suicide**.**

3.7 Sampling and sample size

Various sampling frames were used as dictated by research objectives. For objective one about rate of suicide and suicide attempts, sample size determination was purposeful. All suicide

attempts and all deaths by suicide were recorded for a period of two years and were used to calculate incidence rates. In this study, it was not possible pre-determine the sample size as we collected incidences or cases as they happened within the two district populations. If no one died of suicide, there would have been no prevalence to calculate, no case and no rate to report.

For the second objective about risk and associated factors, the sampling was purposeful as demographics variables, type of suicide behavior (death or attempts) and circumstances leading to suicide behavior were collected in a similar fashion as in objective one to determine risk and associated factors. The cases therefore became the samples from which data was collected.

The third objective about testing whether Village Helpers when trained were able to mitigate suicide behavior from their localities, the sampling was purposive as in objective one; the number of all suicide attempts and death by suicides were compared for Gulu and Amuru Districts to determine the outcome of using VHs.

For objective four about psychological health and performance of Village Helpers, the selection was purposive. The Village helpers were selected from parishes (N=64) with the help of Assistant Community Development Officers (ACDOs) of all the sub-counties of Gulu District with a predetermined criteria (see section 3.8 paragraph 4 below).

3.8 Selection Criteria

The selection of eligible persons was based on whether one attempted suicide or died by suicide. The first objective was to assess the rate of suicide and suicide attempts in Gulu and Amuru Districts. All persons who attempted suicide or died by suicide during the study period were counted and recorded by VHs in order to calculate the rate of suicide attempts and death by suicide in both Amuru and Gulu Districts.

The second objective was to assess risk and associated factors of suicide behavior in Gulu District. Data on age, gender, religion, level of education, marital status and number of children of all persons who attempted or died by suicide during the study period were collected to elicit associated factors. Eligibility criteria were therefore having attempted or died by suicide.

The third objective was to test whether trained Village Helpers could be effective in preventing suicide within their localities. Here, the Community Development Officer (CDO) of Gulu District was purposively requested to selected one person per parish (N=64) in the twelve sub-counties of Gulu District. The criteria used for selection were that the person should be; 1- approachable, 2- respectable, 3- sociable, 4- willing to provide help and 5- acceptable by the community (Ovuga, et al., 2007). Equal representation of male or female, youth and elderly were considered. Education level did not matter based on the previous work of Ovuga, et al., (2007). Their work on mitigating risk factors for and preventing suicide behavior then formed the basis for the evaluation of the effectiveness of the intervention.

The fourth objective was to determine the psychological health of the Village Helpers before and at the end of the intervention and to determine the psychological fitness and performance during the suicide intervention. Eligible individuals were those individuals selected from parishes of Gulu District who participated in the intervention later named Village Helpers.

3.9 Instruments

Several instruments were adapted and some developed as required for an objective. Here they are presented in the order in which they were used to collect the essential data at that point. The first tools were Sense of Coherence (SOC) (Antonovsky, 1987) and Response Inventory for Stressful Life Events (RISLE) (Ovuga, 2005). These were used before and after the training of VHs as a

way for preparing them to be resilient and healthy during the intervention and become motivated to sustain the spirit of helping beyond project life.

The other was questionnaires designed to collect data on the circumstances of individuals who attempted or died by suicide. Another questionnaire was used to collect data on the performance and experience of Village Helpers during the study period. All these tools were discussed as follows:

3.9.1 Sense of Coherence (SOC)

SOC (Antonovsky, 1987) is a global orientation of how people view their world as comprehensible, meaningful and manageable and that this viewing has positive effect on one's health. SOC is a deep rooted attitude towards life that develops in childhood and stabilizes around year 30s (Antonovsky, 1993). It tends to increase with age in that older persons have higher mean SOC scores than younger persons (Ericksson and Lindström, 2005). Epidemiological data show that changes in sense of coherence is related to societal changes and psychiatric complaints in the population (Horje, Blom, Seriachius, Larson, Teorell & Ingvar, 2010). SOC has a long version (27 items) developed by Antonovsky (1993) and a short version (13 items) developed by Luyckx, Goossens, Apers, et al. 2012). This study used the short version. Each SOC item is scored on a 7 point Likert scale where 1 = not at all and 7 = ever happens; this scoring are reversed in some items where 1 = happens always and 7 = never happens. Reviewing application of SOC in 127 languages, Eriksson & Lindström (2005) found it is reliable (Cronbach alpha = 0.8, test retest corr.= 0.69-0.78), valid and cross culturally applicable.

3.9.2 Response Inventory Stressful Life Events (RISLE)

RISLE was developed by Ovuga & Mugisa (1992) and validated by Ovuga, et al. (2005) on Uganda population. It has a short and a long version. The study used a short version of 35 items. This instrument measures psychological distress and suicidal behavior in adults. It is reliable with Alpha value of 0.86; and it was found reliable and correlated closely with Becks' Depression Inventory (BDI) and Becks Scale for Suicide Ideation (BSS). It is scored on a 4 point Likert scale where 1 = strongly disagree, 2 = disagree, 3= agree and 4=strongly agree. With a cut-off point of 10, it has sensitivity of 74.6% and specificity of 74.1%.

3.9.3 Questionnaire for collecting data on suicide and suicide attempts

A tool was developed for collecting data on those who attempted suicide and those who died by suicide. It collected demographic variables such as name, gender, age, religion, level of education, marital status, and number of children. Other variables collected were suicide behavior (threat, attempt or death) circumstances leading to that behavior including what the Village Helpers' responses (counsel or refer) were. It was interviewer administered, short and easy to use as there was training on its administration. The VHs entered answers directly into the instrument.

Interviews around autopsy were conducted by the researcher himself as additional data to determine associated factors for suicide behavior in Gulu. The information on the performance of VHs was also collected to show whether their training and deployment was effective in containing suicide in their respective locality. It was VHs' actions and responses (counsel or refer) which were documented and used to assess their performance. All instruments were back translated from English to Luo - Acholi dialect.

3.10 Procedure

A consultative and sensitization workshop was organized for District leaders, Security personnel, Local Administration Officials, Religious Leaders, and Civil Opinion Leaders where the resolve for preventing suicide (the study) was announced. Formal entry was done by writing introductory letters to the District authorities requesting for exploratory meetings. These initial meetings, with the local administrative and political authorities were held at all sub-counties and Head Quarters in the Gulu district. The opinion and recommendations of the leaders on the study was used for planning the study and verbal expression for no objection to the study was recorded. The next step was to invite one Health Worker (HW) per facility (N=85) from all health centers (II-IV) and hospitals from both Gulu and Amuru Districts through their District Health Officers (DHOs) for training that lasted three days. The training was on enhancing identification and management of common mental illness with drugs and counseling in preparation for the surge in referrals that this intervention study would generate.

Table 3.2, *Composition of Health Care providers by Gender, Designation and level of Health Unit from Gulu and Amuru Districts*

Variable	**Category**	**Number (N)**	**Percentage (%)**
Gender	Male	38	44.7
	Female	**47**	**55.3**
		85	100
Designation	Nurse Assistant	22	25.8
	Enrolled Nurse	**38**	**44.7**
	Nursing Officer	7	8.2
	Medical Clinical Officer	17	20
	Psychiatric Clinical Officer	1	1.4
		85	100
Health Centers	Health Center II	**54**	**63.5**
	Health Center III	18	21.2
	Health Center IV	3	3.5
	Army Hospital	1	1.2
	Lacor Hospital	2	2.4
	Prison Health Center	1	1.2
	Police Health Center	1	1.2
	Municipal Health Centers	5	5.8
		85	100

Table 3.2 above shows the composition of the Health workers invited for training. 55.3% were female; the majority was Enrolled Nurses (44.7%) and Nurse Aid or Nurse Assistants 25.8%, coming mainly from Health Center IIs (63.5%). This composition of low cadre professionals calls for rethinking of how mental health care can effectively be integrated in primary care. The areas in question here are of making appropriate diagnosis, use of psychoactive drugs and provision of psychological care to the communities including making referrals to higher level health centers.

Ugandan health care system is divided into levels. Level I is Health Center one (HCI) at the Village. As a center, it is managed by Village Health Teams (VHTs). Level II is HCII at parish, and as a maternity centre it is managed by Enrolled Midwife, level III (HCIII) is at sub-county managed by Medical Clinical Officer, and level IV (HCIV) is a District Hospital and managed by a General Practitioner (GP) other levels are at the referral centers both Regional and National where there are consultants. Similar levels are found in Armed forces, Police and Prison services were other Primary Health care providers came from.

The third step was that of Community Development Officer (CDO) of Gulu District who was requested to recruit one person per parish to be trained as Village Helper for suicide prevention. This activity was followed with distribution of baseline data collection tools in the twelve sub-counties Gulu district and register books at all health centers in both Gulu and Amuru districts.

The last step was the distribution of Information, Education and Communication (IEC) materials which were produced in English, Swahili and Luo to both Gulu and Amuru health centers. These IEC materials were displayed in open places where communities could access, read, discuss and use the massages included to consult. Anybody who felt they needed help on reacting to the massages would then use help contacts in the posters to call a health worker or VHs for

psychological help. Mobile contacts of the Principal Investigator (EO) of Primary health care Project (PHC) and of this researcher (HO) were printed on the IEC to aid consultation and referral; while that of the Chairman, Lacor Hospital Research Ethics Committee (REC) was printed on the posters to aid reporting of any research misconduct.

3.11 Training

The training of Primary Health Providers and that of Village Helpers in preparation for the intervention on suicide are discussed separately here below.

3.11.1 Training Primary Health Care Providers

The invited health worker per facility from Gulu and Amuru (N=85) were congregated in Gulu Regional Referral Hospital (GRRH) boardroom for a three day non-residential training. The aim of the training was to impart knowledge, skills and attitudes in mental health sufficient to task shift between site-based health care activities and community outreaches including considering mental health issues as a big component of primary health care. The facilitators comprised of Professor of Psychiatry (EO), a senior Psychiatric Clinical Officer (WO), Clinical Psychologist (HO) and a Community Psychologist (AK). The participants were trained in recognition, treatment and/or referral of mental illness, assessing for suicide, prevention and risk factors for suicidal behavior. Counseling, stress and anger management were included in the training program. Real life cases were produced and given for group discussions. The groups would then present at plenary sessions. Facilitators encouraged sharing personal experiences which each topic being discussed was bringing out thus making the training experiential and interactive. Trainees who had personal problems and needed consultation were encouraged to do so privately during training breaks. Those who needed further consultation were guided to Gulu Regional Referral Hospital for further care. At the end of the training, the participants were taken through the questionnaire for capturing data during the intervention.

We used adult learning methodology and clinical approach to train, however we deplored the HWs to evaluate how their personal and daily psychological disposition could affect clinical interactions and outcome. They were then requested to pay attention to this always before starting work. The content of the training are listed here below:

a) *Introduction to mental health, Am I well?*
b) *Mental health situation in Northern Uganda*
c) *Recognition, diagnosis & management of Depressive conditions*
d) *Recognition, diagnosis & management of Anxiety spectrum disorders*
e) *Recognition, diagnosis & management of psychotic disorders*
f) *HIV and Organic mental disorders*
g) *Interpersonal difficulties & resolution: Household and workplace*
h) *Suicide –Assess, manage & prevent at Health Center and at community*
i) *Legislation and Policy issues; Suicide and mental illness*
j) *Stress related disorders, issues of self care and care of others*
k) *Counseling and Psychotherapy approaches for patients, workmates and family*

3.11.2 Training Village Helpers

The training of Village Helpers (N=64) lasted one week per site. The first training was conducted in Lalogi sub-county, a site for Odek, Lakwana and Lalogi sub-counties; the second one was conducted in Koro sub-county, a site for Koro, Ongako and Bobi sub-counties and the third training was conducted in Awach sub-county, a site for Bungatira, Patiko, Palaro Unyama, Paicho and Awach sub-counties. The training of Village Helpers started with presentations on recognizing and responding to distress at individual level and then at household level. Participants were encouraged to ask questions and share personal distressing experiences and experiences at individual household level. This experiential approach was used to simplify the understanding of the subsequent topics. Participants were taken through recognizing and responding to different types of common mental illnesses (mild or severe) with counseling,

networking and referral; recognizing and responding to suicide talks or indicators and working with suicide attempters by providing counseling support and/or referral and follow up, recognizing and responding to use of alcohol and other substances of abuse through community sensitization and helping individuals who would seek for individual help or help for a friend. They were also encouraged to look for help networks with NGOs and Government agencies so as to refer other clients whose help needs may be outside the health sector.

The training was conducted in both Luo (native language) and English as some participants were not very competent in English. The content for the training of the Village helpers is listed here below:

a) *Definitions to Concepts in mental health*
b) *How to recognize distress in household (discuss case of Ocan here)*
c) *Causes, manifestation, and effect of mental illness*
d) *Recognition and management of Depression*
e) *Recognition and management of Anxiety*
f) *Alcohol: effects and management (discuss case of Denis here)*
g) *Severe mental illness; psychoses and mania*
h) *Suicide, definitions, causes and effects on society*
i) *Manifestation, warning signs, effects of suicide on the household*
j) *Suicide prevention (discuss case of Ben here)*
k) *Counseling, and psychological hygiene (stress and anger management)*

Real life case scenarios involving families with ascending degree of difficulty were produced and used for group discussions. The case scenarios were that of Ocan, Denis and Ben as narrated here:

Case 1, *Ocan, 12 years old ran away from school. He has refused to go back to school and does not even want to stay at their home. You as a community counselor noticed Ocan has not eaten for two days. He says he hates his father who when drunk beats his mother. The mother spends most of her time crying. Help Ocan. 1). Identify issues that are presented here. 2). Show how you solve each of the issues identified. 3).What strategies are available to help you enter Ocan's family?*

Case 2, *Denis 30year old, was happy man after marring Annette 20 yrs. They had two children John and Mary. They brought Jane to look after the children when they were at work. One day Jane reported fever on Mary. She was treated but later her brain was affected. She failed to walk and would help herself helplessly around. The problem was much for Jane and she left. Annette left work to care for Mary. Denis saw his family going down and started drinking. This resulted to his sacking as he absented from work most of the time. John was to be taken to school daily but no one was doing so. Annett' character has changed. Help Denis' family. 1). Identify issues that are presented here. 2). Show how you solve each of these issues identified. 3). Show how you approach Denis's family?*

Case 3, *Ben, your close friend called you on phone. "I need to see you, if you delay you will find me away" He hangs up as if the credit was over. His tone sounded a man in serious distress. He has never sounded like this before. Help Ben. 1). Identify issues that are presented here. 2). Show how you will approach and solve each of the issues identified.*

Several groups were formed and given the same case scenario. The idea was for the groups to provide a variety of solutions to be presented at plenary sessions for general discussions. The facilitators guided the discussions with reflective questioning, explanation followed by outlining the different problems each case presented. Counseling approaches and strategies that were needed to provide solutions were presented. During these sessions, trainees were encouraged to ask questions and provide local anonymous case scenarios of their own for further experience sharing. This approach was to arm them with case management and conflict resolution strategies to be used at the community.

Village Helpers were later trained on data collection in detail on incidences of suicides and suicide attempts from the parishes. The VHs capturing of incidences of suicide attempts and of death by suicide continued for 24 months of project life in 2015-2016.

The trained Primary Health Care providers and Village Helpers for Gulu District were paired and deployed back to their respective health centers and parishes of origin. Other HWs from Amuru were also redeployed to their work places. Support supervision was provided to them quarterly by a Senior Psychiatric Clinical Officer (SPCO) and a counseling psychologist based at GRRH. The SPCO did clinical supervision while the counseling psychologist supported the Village Helpers with counseling queries. The duo also supervised data collection at health centers and parishes. The overall support supervision and referral backup were provided by a psychiatrist (EO) and a clinical psychologist (HO) both of the Faculty of Medicine, Gulu University.

3.12 Data collection

Village Helpers (for Gulu) and Primary Health Care providers (for Amuru) were instrumental in collecting information on all incidences of suicide and suicide attempts from 2015 to 2016 (24 months). Variables like age, gender, occupation, marital status, level of education, and number of children were collected from those incidences. The Village Helpers recorded detailed information on all suicide attempts and deaths in their parishes; while Primary Health Care providers recorded detailed information on those who died or were resuscitated after suicide attempts at their facilities.

3.13 Data analysis plan

Procedural data was collected on VHs using two tools; Sense of Coherence (SOC) and RISLE. These tools were administered two times (pre and post training) to assess the impact of training

psychological health of the trainees. The analysis used of Means, Standard Deviation (SD) and one group t-test. A p-value of less than 0.05 was deemed significant.

The performance of the Village Helpers was also evaluated by analyzing the different cases they solved and those they did not solve. Here cross tabulation and Chi square test (X^2) was used to assess the common cases that were solved and those which were not solved. A p-value of less that 0.05 was deemed significant.

Data on suicide and suicide attempts and their characteristics were collected to help in the calculation of burden of suicide and suicide attempts. The data analysis plan was as follows:

1- **The Incidence of suicide and suicide attempts:** This was computed using the denominator of the total population of Gulu and of Amuru Districts and expressed per 100,000. For percentage reduction of suicides and suicide attempts, the differences in incidences recorded between 2015 and the second year (2016) of intervention were expressed per 100. To get gender ratios (i.e. male to female), the totals of male incidences was divided with the totals for that of women and expressed as one man into several women. For annual differences in suicide and suicide attempts and changes in gender suicidal behavior; means, Standard Deviation (SD) and t-test were performed and p-value of 0.05 was considered significant.

2- **Village Helpers Sense of Coherence (SOC):** This data were collected at two time points; T1 and T2. T1 was at the beginning of the training and T2 was at the end of the training. This data was analyzed to detect changes that the training made on the mental health of the trainees. Means, Standard Deviation (SD), one group t-tests, and effect size were performed to detect these changes in SOC as a construct and its domains. Here too, a p-value of 0.05 was considered significant.

3- **Village Helpers' contributions**:

Village helpers were tasked to collect data on all the individuals they provided counseling to and those they referred to different services elsewhere. Village Helpers' contributions were analyzed from this data since the data was linked directly or indirectly to the effort of preventing suicide and suicide attempts. However, no data were collected from the beneficiaries of help, how they viewed the help and how they were telling others about such help. It was assumed that news about efficacy or any behavior change brought about by Village Helpers would cascade the entire parish and would cause others in distress to consult, self change or become self efficacious. This data was analyzed using cross tabulation to detect the common and uncommon cases the HVs worked on. Chi square values were presented and p-value of 0.05 was considered significant.

3.14 Data quality control

Primary Health Care providers and Village Helpers were trained on the research protocol and in administration of the instruments. All instruments were interviewer administered. Data collected were inspected and cleaned on site to minimize errors. It was transferred to a store where accessibility was restricted to this researcher (HO) through password and lock and key. Data was analyzed for, incidence, risk and confounding factors. Other data on Village Helpers was cleaned, coded, and analyzed for performance effectiveness. Evaluation of changes during the intervention was plotted on monthly bases to gauge the graphical slope. SPSS version 15 was the data analysis software used in this study.

3.15 Ethical consideration

Ethically, all national and international rules and regulations regarding use of human participants were followed rigorously (UNCST 2007, WHO 2012). Ethical clearance of the research protocol

was obtained from Lacor Hospital Research Ethics Committee (LHREC) referenced 054/09/14. Uganda National Council of Science and Technology (UNCST) gave clearance, referenced SS 3678. Confidentiality was always explained to participants and adhered to before providing consent information. Verbal consent was obtained from community representatives and from those who participated in interviews and meetings. Informed consent was received from participants for Village Helpers assessments. A Psychiatric Clinical Officer was engaged for management of referred cases and for providing constant clinical support supervision to Primary Health Care providers. A counseling psychologist was engaged to provide treatment to those individuals referred to care during the intervention. The counseling psychologist also provided support supervision and answered counseling queries from Village Helpers during the intervention period. Village Helpers had explanation during training on how the task of supporting people with suicidal behavior or supporting people in distress might affect them vicariously during intervention. There were Village Helpers who were found with trauma that benefitted from counseling by HO and some were referred to the EO for psychiatric management. For those who were interviewed around suicide autopsy, the process was sensitive to their emotions and the interviews were concluded in a manner that was therapeutic. For those that were identified from the parishes and from health centers as having serious mental health conditions during the intervention, a referral system was put in place to the nearest Health Centers through to Gulu Regional Referral Hospital (GRRH). In this study one health worker per facility was trained in the management of common mental illnesses and Primary Health Care providers at GRRH were informed about the study so as to expect referrals and to expedite help. In addition, clinical supervisory visits were intended to support the Primary Health Care providers and the Village Helpers with their own distresses and with management of difficult cases. In this way participants who were distressed before or during the course of the study

benefited from ‘intention to treat’ policy. However even those who needed private consultation were encouraged to call using mobile numbers of HO and EO which were printed on the posters.

CHAPTER FOUR

RESULTS

4.1 Introduction

This section is presented in the order of which objective was first implemented and analyzed. In this study, psychological assessment of Village helpers was done in the beginning of the intervention and here it is presented first. The other objectives were handled together within the intervention answering whether suicide was preventable using Village Helpers. Results from data on performance of VHs were presented last.

4.2 Results of assessments of Impact of training on mental health of Village Helpers *[Paper published in Jacobs Journal of Community Medicine, 2017, 3(1) 031.]*

This paper demonstrates the investment made to psychologically prepare, empower and motivate VHs to find strength in this intervention and sustain it beyond project life. There were 64 Village Helpers assessed pre and post test for psychological stability before training using Response Inventory for Stressful Life Events (RISLE) (Ovuga, et al, 2005) and SOC-13 (Atonovsky, 1987). Fifty eight (58/64, 79.4%) had valid records while 10/64(20.6%) had invalid records. The participants comprised 46 males (79.3%) aged between 22-65years with a mean age 37.8 years; 12 females (20.7%) aged between 22-45 years with a mean of 34.1 years. The majority of VHs were within 20-40 years (77.6%). For those who were employed, duration in service range from 0-27 years (mean = 6.6, median = 7). The numbers of children participants had ranged from 0 to10 children (mean = 3.5, median = 3). (See Table 4.1)

The assessment was done at beginning of the training (T1) and at end of training (T2). SOC scores were analyzed at item level and at domain level. The domains comprised of

Comprehensibility, Manageability and Meaningfulness. At the item level, mean differences and associated p-values are reported (see Table 4.3).

Table 4.1, *Demographic characteristics for VHs trainees.*

Variable	Category	N %
	Males	**46 (79.4)***
Gender	Females	12 (20.6)
	21-30	**26 (44.8)***
Age	31-40	19 (32.8)
	41-50	8(13.8)
	>51	5 (8.6)
Religion	Catholic	**35 (60.3)***
	Protestant	18 (31.0)
	Pentecostal	5 (8.6)
	Moslem	0.0
	Primary	12 (20.7)
	Secondary	24(41.4)
Education	Tertiary	15(25.9)
	University	7(12.1)
	Single	11(19.0)
	Cohabiting	**22(37.9)***
Marital status	Married	21(36.2)
	Separated	4(6.9)
	Employed	24.6
	Peasant	**57.9***
Occupation	Skilled laborer	4.0
	Community worker	13.5
	0	8 (13.8)
Number of Children	1-2	**18(31.0)***
	3-5	15 (27.6)
	>6	16 (26.5)

4.3 Independent t-test (RISLE)

There was a general reduction in RISLE scores for respondents at T2 (p = 0.37ns, not significant) except for items 6 (reaction to latest hardship), 8 (confusion for not knowing what to do when in difficulty), 12 (worry over personal problems), 13 (kill myself before they do so), 17 (remind relatives of their responsibilities), 19 (teach my relatives a lesson) and 31(wish to be dead than alive in the face of difficulties) where the scores increased. The reductions were 100% for items

Table 4.2, *RISLE means and p-values*

Variable	Mean- T1	Mean- T2	Mean- diff	% change	*P*-value
1. Life is intolerable	0.148	0.109	0.038	25.7	0.53
2. Life is hell on earth	0.098	0.047	0.051	52.0	0.27
3. The world has nothing to offer	0.098	0.047	0.051	52.0	0.27
4 Wish to be out of this world	0.082	0.031	0.051	62.2	0.22
5. Extent of pain	0.098	0.078	0.02	20.4	0.69
6. Reaction to latest hardship	0.29	0.344	-0.053	-18.3	0.52
7. Nervousness	0.565	0.563	0.002	0.4	0.98
8. Confusion	0.39	0.403	-0.013	-3.3	0.88
9. Difficult times	0.194	0.094	0.099	51.0	0.11
10. Death solution to problems	0.097	0.047	0.05	51.5	0.28
11. Kill self after business collapses	0.033	0.031	0.002	6.1	0.96
12. Worry	0.71	0.778	-0.068	-9.6	0.39
13. Kill self before they do so	0.067	0.095	-0.029	-43.3	0.57
14. Give oneself one more chance	0.098	0.094	0.005	5.1	0.93
15. No way out	0.082	0.063	0.019	23.2	0.68
16. Relieve relatives of problems	0.097	0.078	0.019	19.6	0.71
17. Remind relatives of responsibilities	0.115	0.177	-0.063	-54.8	0.33
18. Punish my relatives	0.05	0.031	0.019	38.0	0.6
19. Teach my relatives a lesson	0.119	0.156	-0.038	-31.9	0.55
20. Die to get away from problems	0.049	0.047	0.002	4.1	0.95
21. Death solution to problems	0.033	0.016	0.017	51.5	0.53
22. Go to another town	0.355	0.317	0.037	10.4	0.66
23. Teach them a lesson	0.103	0	0.103	100.0	0.01*
24. Kill self	0.048	0	0.048	100.0	0.08
25. Wish died with relatives	0.131	0.109	0.022	16.8	0.71
26. Wish kill self	0.033	0.032	0.002	6.1	0.96
27. Kill self to end suffering	0.081	0.063	0.018	22.2	0.7
29. Kill self before full features develop	0.066	0.047	0.019	28.8	0.65
30. Lost control	0.213	0.094	0.119	55.9	0.06
31. Wish to be dead than alive	0.048	0.063	-0.014	-29.2	0.73
32. End life rather than live with problems	0.067	0.048	0.019	28.4	0.65
33. No appreciation	0.306	0.219	0.088	28.8	0.27
34. Wonder why born	0.267	0.177	0.089	33.3	0.24
35. No practical assistance	0.295	0.258	0.037	12.5	0.65
37. All variables	4.92	4.3	0.63	12.8	0.37

*P** = means significant

23 (teach them a lesson, p=0.01sig.) and 24 (kill self, p=0.08nsig) where the VHs realized killing oneself in order to teach relatives a lesson was not appropriate.

Over 60% change was recorded in item 4 (wish to be out of this world, p=0.22ns while perspectives towards 'lost control' (item 30, p=0.06ns), 'life is hell on earth' (item 2, p=0.27ns), 'the world has nothing to offer' (item 3, p=0.27ns) changed by over 50% indicating improved general wish to live regardless of adversities.

4.4 Independent t-test for Sense of Coherence (SOC)

Improved psychological functioning was shown by high SOC scores. This result show general positive changes in items means between T1 and T2 (p=0.10ns). There was reduction in means for items 1 (feeling about care, p=0.99ns), 2 (behavior of people, p=0.81ns), 9 (feelings inside, p=0.55ns), and 11 (when something happens, p=0.07ns). Mean SOC scores were higher on the remaining items. A substantial change occurred in item 4 (life having clear goals and purpose p=0.01s). Improved ability to achieve ones' goals and objectives in life especially if previous plans had failed repetitively, had a protective factor towards development of depressive feelings and self-destructive behavior. A positive change for all variables (p = 0.10) indicated personal growth with improvements towards coping with life challenges (see Table 4.3).

SOC has three domains where items 2, 6, 8, 9 and 11 were collapsed to a domain called comprehensibility; items 3, 5, 10 and 13 were collapsed into manageability domain and items 1, 4, 7 and 12 into meaningfulness domain (Luyckx, Goosens et al., 2012, Naaldenberg, Tobi, Van den Esker & Vaandrager, 2011). Comprehensibility relates to the belief that worldly things happen in an orderly and predictable manner in that one can understand the events in ones' life and is able to reasonably predict the future. Manageability denotes belief that one has the skills and the abilities, the support, the help or the resources necessary to take care of the challenges in

life and that all things are manageable and they are within ones' control. Meaningfulness is related to the notion that things or events are interesting and are a source of satisfaction, worthwhile and there is a good reason or purpose to care about what happens (Flensbog-Madsen, Ventegodt & Merrick, 2005; Apers, Rassat, Luyckx, et al., 2016).

Table 4.3, *SOC scores for Village Helpers by the means, standard deviations and p-values*

	Variable	**Mean- 1**	**Mean- 2**	***M*- difference**	**SD –1**	**SD – 2**	**P-value**
1	Feeling about care	5.145 *CI 4.629 to 5.661*	5.140 *CI 4.571 to 5.710*	0.004 *CI -0.758 to 0.767*	2.03	2.28	0.99
2	Behavior of people	5.242 *CI 4.722 to 5.762*	5.156 *CI 4.644 to 5.668*	0.086 *CI -0.636 to 0.808*	2.05	2.05	0.81
3	People disappointed you	4.419 *CI 3.851 to 4.987*	4.750 *CI 4.277 to 5.223*	-0.331 *CI -1.061 to 0.399*	2.24	1.89	0.37
4	Clear goals	5.213 *CI 4.690 to 5.736*	6.016 *CI 5.676 to 6.356*	-0.803 *CI -1.42 to -0.189*	2.04	1.35	0.01*
5	Treated unfairly	4.081 *CI 3.548 to 4.614*	4.406 *CI 4.019 to 4.794*	-0.326 *CI -0.975 to 0.324*	2.10	1.55	0.32
6	Unfamiliar situation	4.790 *CI 4.254 to 5.327*	5.125 *CI 4.645 to 5.605*	-0.335 *CI -1.047 to 0.377*	2.11	1.92	0.35
7	Pleasure	2.564 *CI 2.122 to 3.007*	2.703 *CI 2.254 to 3.152*	-0.137 *CI -0.763 to 0.486*	1.74	1.80	0.66
8	Mixed up feelings	4.613 *CI 4.043 to 5.182*	4.688 *CI 4.227 to 5.148*	-0.075 *CI -0.797 to 0.648*	2.24	1.84	0.84
9	Feelings inside	3.726 *CI 3.178 to 4.274*	3.500 *CI 2.989 to 4.011*	0.226 *CI -0.516 to 0.967*	2.16	2.05	0.55
10	Sad sucks	4.0 *CI 3.536 to 4.464*	4.476 *CI 4.072 to 4.880*	-0.476 *CI -1.085 to 0.133*	1.83	1.61	0.12
11	When something happens	3.855 *CI 3.292 to 4.418*	3.188 *CI 2.710 to 3.665*	0.667 *CI -0.061 to 1.396*	2.22	1.91	0.07
12	Meaning in daily life	4.677 *CI 4.098 to 5.257*	5.0 *CI 4.519 to 5.481*	-0.323 *CI -1.066 to 0.421*	2.28	1.93	0.39
13	Keep under control	5.065 *CI 4.509 to 5.620*	5.125 CI 4.630 to 5.620	-0.060 CI -0.796 to 0.675	2.19	1.98	0.87
14	All variables	57.279 *CI 55.03 to 59.53*	59.839 *CI 57.67 to 62.00*	-2.560 *CI -5.654 to 0.534*	8.79	8.54	0.10

*CI = Confidence Interval, SD = Standard Deviation, *p-value = Significant (2-tail)*

The preceding statements presuppose that increased SOC denote ones' ability to cope with life adversities and stay healthy (Antonovsky, 1987). Results for this assessment also show changes in the domains of SOC. The domain, comprehensibility marginally increased by mean difference of 0.72, (SD=6.4, CI=0.88-2.3, *p*=0.61ns); while manageability increased significantly with a

mean difference of -1.68 (SD=5.28, CI= -3.1-0.28, *p*=0.002s), and meaningfulness decreased significantly with a mean difference of 4.6, (SD=7.5, CI=2.6 - 6.6, *p*=0.000s). Overall mean difference increased by 3.6 (SD=7.5, CI=0.12 -7.0, *p*=0.21ns). (see Table 4.4).

Table 4.4 *Components of SOC with mean difference and t-statistic at T1 and T2*

SOC Components T1/2	Mean Diff	SD	CI (95%)	t	*p- (2-tail)*
Compre1-Compre2	0.719	6.044	-0.88433-2.3229	0.899	0.069
Manag1-Manag2	-1.684	5.285	-3.0866- -0.282	-2.406	0.019*
Meaning1-Meaning2	4.614	7.539	2.6135-6.6146	4.620	0.000*
Soc1Tot-Soc2Tot	3.600	12.8475	0.1268-7.0742	2.078	0.042*

*SD=Standard Deviation, CI= Confidence Interval, *p-value =Significant.*

The interpretation for a slight increase in comprehensibility show improvement in ability to understand that events in life happen predictably and that one should be prepared with sufficient skills and resources (increased manageability) when such event befalls. A reduction in meaningfulness did show realization that events around the Village Helpers were increasingly uninteresting and yet they had to solve them. Literatures from western world show that changes in SOC were unidirectional. It is therefore not known if other factors and possibly coming from a post conflict setting could explain the multidirectional changes in this study.

4.5 Patterns of Suicide in Gulu District

Gulu district had a population of 436,345 with a density of 127 persons per square kilometer. Suicide and suicide attempt incidences were collected from 47/54 (83%) parishes with a population of 362,166 people. These were parishes with active and resident Village Helper. Other parishes, 7/54(17%) with a population of 74,179 people were excluded from the analysis

for having no substantive resident Village Helper and therefore having no credible data. From the available data there were a total of 111 (one hundred and eleven) suicides in the period between 2015 and 2016; averaged at 55.5 cases per annum. Sixty eight (68, represents 20 per 100,000) cases of suicide were recorded in 2015 while 43 (representing 12.5 per 100,000) cases were recorded in 2016. This was a 25/68(36.8%) reduction in suicides within the intervention period, i.e. 39.6% for males and 26.7% for females. The intervention outcome was 36.8% as total reduction in suicide cases between 2015 and 2016; representing a reduction in ratio from 20 per 100,000 to 12 per 100,000 (see Table 4.5).

Table 4.5 *Male and Female suicide and suicide attempts statistics for Gulu District 2015-2016.*

Variable	Mean Diff	SD	CI (95%)	df	*p- (2-tail)*
Suicide					
Men v female 2015	2.667	3.939	0.164-5.169	11	0.039*
Men v female 2016	1.917	2.314	0.466-3.387	11	0.015*
2015 v 2016	1.750	4..070	-0.836-1.489	11	0.165
Suicide Attempts					
Men v female 2015	3.750	3.841	1.310-6.190	11	0.006*
Men v female 2016	1.833	2.758	0.081-3.586	11	0.042*
2015 v 2016	13.250	9.612	7.143-19.351	11	0.001*

*SD= Standard Deviation, CI = Confidence Interval, DF = degree of freedom, *p-value = significant*

Table 4.5, show the statistics of suicide and suicide attempts for the year 2015 and 2016 for both males and females. There were significant differences in suicide between males and females in 2015 and 2016, p-values of 0.039 and 0.015 respectively. The overall suicides between males and females did not significantly change between 2015 and 2016. However, suicide attempts significantly changed during the intervention period with p-value of 0.001. The interpretation for changes in suicides show that males were committing suicides more than females within 2015 and 2016 however the difference was reduced with intervention; thus reducing the number of

males committing suicide closer to that of females as seen non-significant p-0.165 between 2015 and 2016. The other explanation could be found in large reduction in attempted suicides which translated to a reduction of suicides i.e. when the numbers of people attempting suicides reduce, the incidences of death by suicide also reduce.

Figure 4.1, *Line graph showing gender and monthly suicides in Gulu District in 2015 and 2016*

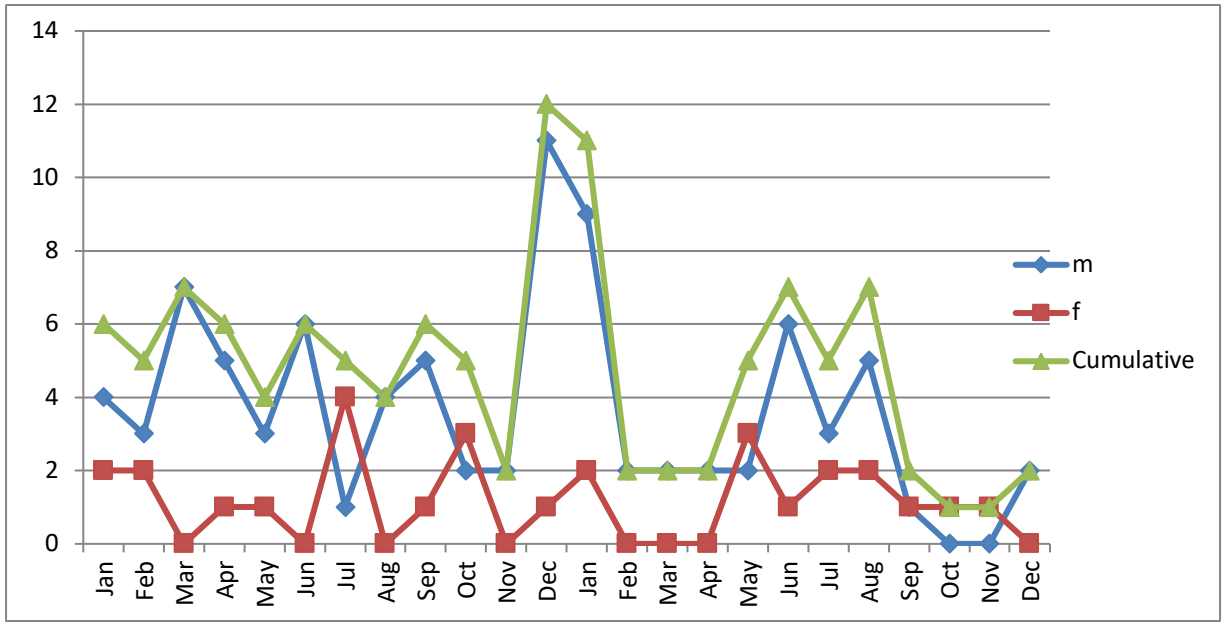

Figure 4.1, above show the pattern of suicides in male and females in Gulu 2015 and 2016. There was a general reduction of suicide incidences within the intervention period but male suicide remained higher than that of females. The pattern of suicides for both males and females showed monthly peaking at different points within the intervention period. A large peak was recorded towards the end of November 2015 to February 2016 and a small one around May and July 2016. Various interpretations for November- December rise were a) this is a period of plenty as crops are harvested and money from local group savings (*bolicup*) have been distributed causing spousal conflict about who to control produce stock and finances at household level. Often women, whose family relationship is shaky, tend to collect and run away with household

belongings and crop produce around the December festive season. This perceived loss of property and possibly loss of power to control household, causes suicide behavior in men. Women also suffer similarly when men chase them away from household income and farm produce collectively earned within that year. In other instances it is conflict or aggression that is used to determine who later yields to abandon the race for control. These are points where Village Helpers became useful in mitigating the differences that brought the conflicts. In this way they prevented conflict from escalating to what would probably cause suicide behaviors.

4.6 Suicide attempts in Gulu

While Table 4.5 show the statistics of suicide attempts, it is important to give a qualitative view of what happened during the intervention. From the available data there were 245 (representing 50 per 100,000) cases of suicide attempts in 2015 while only 86 (representing 20 per 100,000) cases were recorded in 2016, providing for a total suicide attempts reduction of 64.9%, i.e. 62.8% reduction in suicide attempts for males and 68.0% suicide attempts reduction for females. Female to male ratio for suicide attempts was 1:1.5 in 2015 while it was 1:1.7 in 2016; an increase in ratio of 0.02 points in favor of men. Suicide attempts remained high for males than females in this study slightly disputing popular literature that women are over represented in suicide attempts than men. The reason for this now was that females receive social support from groups that they form for savings or for running petty businesses. Males experience role changes and are relegated to solitary lives around alcohol thereby dropping out of the social supportive networks; a recipe for suicidal behavior.

Figure 4.2, *Pattern of Suicide Attempts by gender and month for Gulu District 2015 and 2016*

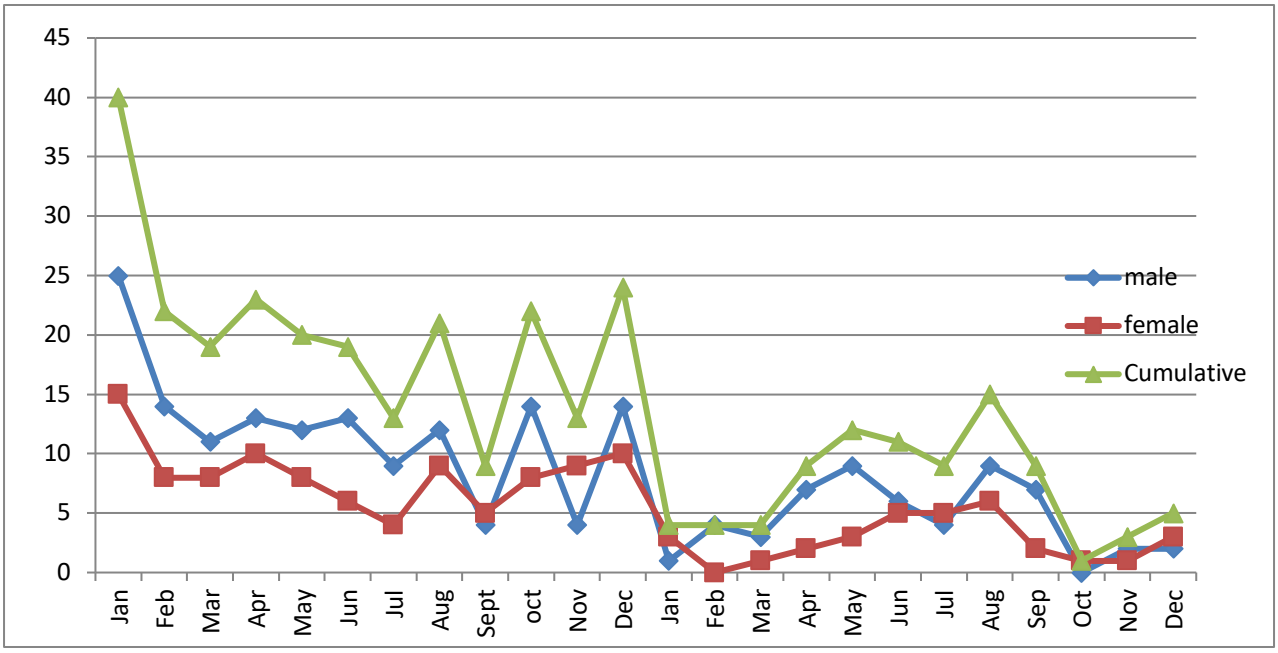

Figure 4.2, above show a cumulative decline of suicide attempts for both male and females in Gulu in 2015 and 2016. The decline however showed variations around August to January 2015 for males and arise from September to December 2015 for females. In 2016, male suicide attempts were higher in May and August while for females it gradually rose and peaked in August and dropped till December. Interpretation for rise in suicide attempts within the stipulated periods resided in human activities, kinships and couple relationships. Conflict over management and use of income from produce threaten most families. Secret savings and loan dealings become apparent around this time requiring spousal accountability. Often explanations given by spouses are not satisfactory resulting into unforeseen outcomes like separation and suicide behaviors.

4.7 Factors associated with suicide and suicide attempts

Demographic variables (gender, age, religion, marital status, educational background, and number of children) were cross-tabulated to elicit the circumstances leading to suicide behavior, means used and outcomes of intervention by the Village Helpers. Circumstances leading to

suicide behavior were interpersonal conflicts, relational problems (spousal or clan kinship), and others like loss (death, arson, loot), family disbandment or land wrangles. Means used concerns the route taken by an individual with intention to end his /her life. Outcomes concern the result of the action taken by the individual whether ending in death by suicide or in self harm. It was gender; religion and marital status that were significantly associated with means contemplated or used (X^2=0.000, 0.000 and 0.001 respectively). This could be interpreted as means used in suicide behavior are learnt and fairly available to all those contemplating suicide behavior. Marital status was associated with circumstances leading to attempts (X^2=0.005). This may be interpreted as being married has potential challenges that cause suicide behavior. Marriage here therefore can be viewed as a source of stress (table 4.7).

Table 4.6 *Chi Square with demographics, suicide behavior, means used, reason and outcome*

Pairs		**X^2**	**df**	**p-value**
Gender	Behavior	10.294	6	0.113
	Reason	25.027	16	0.069
	Means	85.629	18	0.000*
	Outcome	6.706	6	0.349
Religion	Behavior	1.513	9	0.997
	Reason	14.407	24	0.937
	Means	59.602	27	0.000*
	Outcome	7.275	9	0.609
Marital status	Behavior	14.337	12	0.280
	Reason	56.641	32	0.005*
	Means	68.896	36	0.001*
	Outcome	8.418	12	0.752

*Asymp sig. 2-tail

Subjecting all independent and outcome variables to Kendall's *tau* and Somers's *d* statistics, no significant relationships were noted possibly explained in terms of small sample size.

4.8 Patterns of suicide in Amuru District

Amuru District had a population of 186,345 with a density of 53.9 persons per square kilometer (UBOS, 2016). Data for suicides and suicide attempts in Amuru District were collected from health centers where trained Primary Health care providers resided. Primary Health care providers would enquire and record cases of suicides and suicide attempts from Village Health Teams (VHTs) and local leaders when they came to the health center. Other data on suicide attempts were collected from the inpatient records of those Health Centers that did admit clients who ingested poisonous substances with aim of dying but end up in emergencies at the Health Centers. Duplication of data was unlikely since suicide attempts were normally concealed from authorities for fear of litigation and Primary Health care providers were unlikely to disclose such information to police to effect arrests. From raw data, there were 33 suicides (representing 20 per 100,000) in 2015 and 11 suicides (representing 10 per 100,000) in 2016. Male suicides were higher than that of females. A similar trend was maintained in 2016. The total suicide reduction for suicides was 66.7% i.e. 75% for females and 64% for males. Female to male ratio of 1 to 3.1 of 2015 was lower than 1 to 4.5 of 2016 showing that males died by suicide more than females in Amuru. The statistics in table 4.6 below explains suicide and suicide attempts in Amuru District.

Table 4.7 *Male and female suicide and suicide attempts for Amuru in 2015 – 2016.*

Variable	Mean Diff	SD	CI	DF	*p- (2-tail)*
Suicide					
Men v female 2015	1.417	2.193	0.023-2.810	11	0.047*
Men v female 2016	0.583	2.196	-0.157-1.323	11	0.111
2015 v 2016	1.833	2.167	0.456-2.930	11	0.014*
Suicide Attempts					
Men v female 2015	0.083	2.968	-1.803-1.968	11	0.924
Men v female 2016	0.083	2.275	-1.362-1.529	11	0.901
2015 v 2016	2.833	3.639	0.521-5.146	11	0.021*

*SD= Standard Deviation, CI= Confidence Interval, DF = Degree of Freedom, *p-value = significant*

Table 4.7 is showing variations in suicide and suicide attempts in 2016 and 2016 between males and females in Amuru District. Significant differences were recorded among males and females in 2015 with p-values of 0.047. This variation in suicide was not significant in 2016. Significant changes in suicide and suicide attempts were also noted between 2015 and 2016 with p-values of 0.014 and 0.021 respectively. The result show that the intervention with Primary Health care providers alone was able to significantly reduce suicide and suicide attempts in Amuru District.

Figure 4.3, *Pattern of suicide by gender and month for Amuru District in 2015 and 2016*

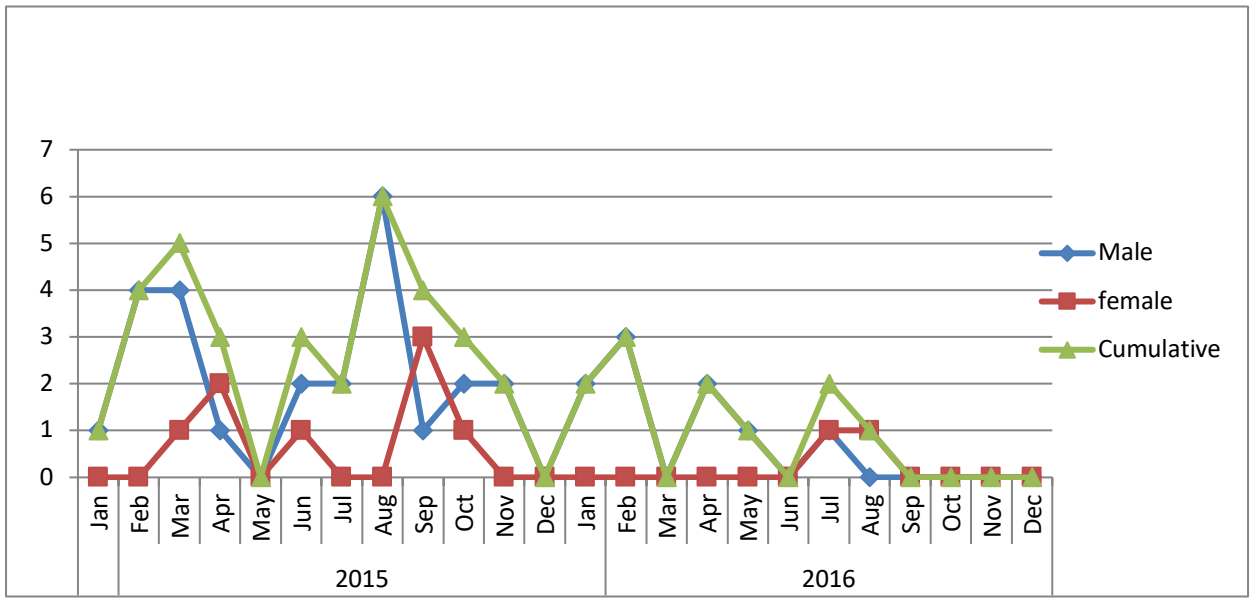

Figure 4.3, above show an erratic male and female suicide pattern in Amuru District in 2015 and 2016. Female suicides were generally lower than that of males. February-March and August were months in which suicide for males were high. Female suicides were elevated in April and September in 2015. In 2016, male suicides were high in January and February while for females was in August and September. Interpretation for the high male suicides in February-March and August hinges on dry weather; a time of idleness and alcoholism including competition for control of household resources (produce and local savings) which breeds conflicts that may end in suicide behavior.

4.9 Suicide Attempts in Amuru District

There were 78 suicide attempts in 2015 and 34 suicide attempts in 2016 in Amuru District. 38 males and 37 females attempted suicide during 2015 and 16 males and 18 females attempted suicide in 2016. In 2015 female to male ratio was 1 to 1 while in 2016 the ratio was also similar. There was a 54.7 % reduction in suicide attempts rate in Amuru District in 2015 and 2016 (estimated reduction from 50 per 100,000 to 20 per 100,000). Reduction of male suicide was 52.6% while that for females was 51.4%.

The interpretation for the large reduction in suicide attempts may be due to small population with low population density of 53.9 persons per square kilometer. Large uninhabited land with low population density provides for few interpersonal conflicts and provides also for minimal land wrangles. The land conflict in Amuru is either tribal or by the rich grabbers and this seems to unite the indigenous residents against intruders thus minimizing the incidence of suicides especially for men. Secondly, women own land, petty businesses and saving groups that keep them networking with fellow women thus protecting them from suicide risks factors.

Figure 4.4, *Male, female and cumulative suicide attempts for Amuru District in 2015 and 2016*

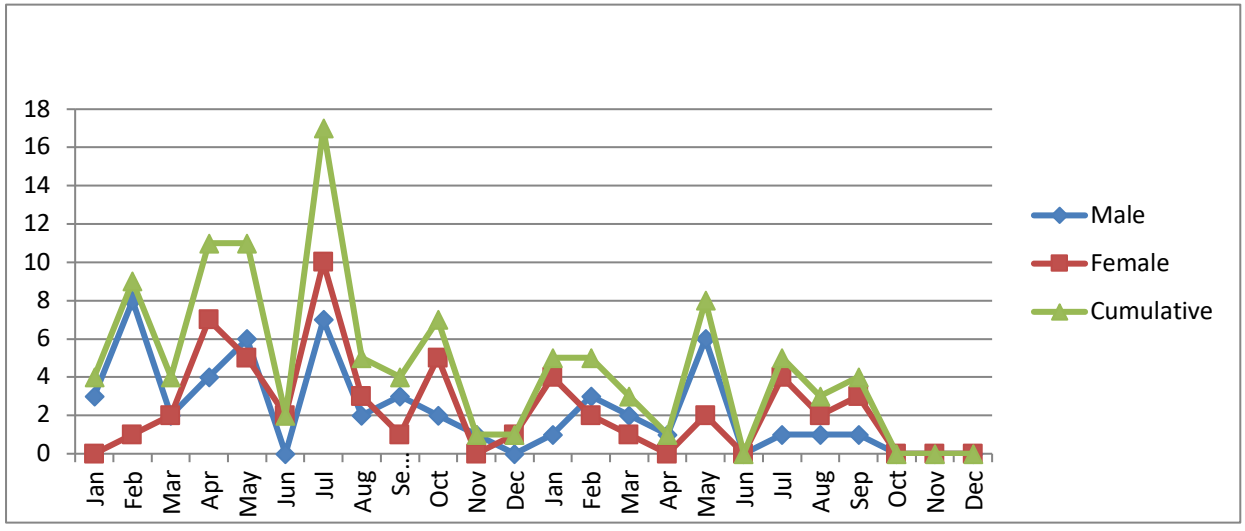

Figure 4.4, above displays an odd pattern of male and female suicide attempts in Amuru District in 2015 and 2016. Female suicide attempts were slightly higher than that of males. The pattern is odd as it did not quite show repetition over the next year but a general negative slope to the right. Male suicide attempts were lowest in June and December for 2015 and 2016. A phenomenon of dry spell tended to play a role as seen in February- April and July 2015; and January- February and July-September of 2016. Interpretation for this is that dry spell is a period of turmoil in family relationships; a period of conflicts that result in domestic violence and even suicide behavior.

Table 4.8, *Comparing Gulu and Amuru in Suicide and Suicide attempts 2015 and 2016*

Variable	Mean Diff	SD	CI	DF	*p- (2-tail)*
Suicide					
Gulu v Amuru 2015	2.917	3.397	0.758-5.075	11	0.013*
Gulu v Amuru 2016	3.000	2.985	1.104-4.986	11	0.005*
Suicide Attempts					
Gulu v Amuru 2015	14.167	9.833	9.919-20.415	11	0.000*
Gulu v Amuru 2016	3.750	4.181	1.094-6.406	11	0.010*

SD = standard deviation, CI = confidence interval, DF = degree of freedom, p= significant*

Table 4.7; show both suicide and suicide attempts for the period spanning 2015 to 2016 between Gulu and Amuru Districts. There were significant differences in suicide and suicide attempts as seen from the mean differences and p-values. There have been more suicides and suicide attempts in Gulu than in Amuru as seen from the raw numbers . Although all suicide behaviors were reduced through intervention, favorable outcome was in prevention of suicide attempts which also resulted in the reduction of suicides in the two districts.

4.10 Results of suicidal behaviors collected by Village Helpers

The Village Helpers complied 142 outstanding cases within the intervention period. The cases comprised of a mix of interpersonal problems at household, chronic illness, mental illness suicide communication, attempts and deaths by suicide. The circumstances that preceded each case, the methods contemplated or used and what the counselor did including its outcome were documented. There were 98/142(69.0%) male and 44/142(31.0%) female. Age ranged from 14 to 68 years (*M* =34.9, *SD* =12.5) (see table 4.8).

Table 4.9 *Demographics of suicide behavior cases managed by VHs*

Variables	**Category**	**N (%)**
Gender	Female	44 (31.0)
	Male	**98 (69.0)***
Age	Below 20	17 (11.9)
	21-35	**57 (40.1)***
	36-45	33 (23.2)
	46-55	15 (10.5)
	Above 56	14 (9.8)
Education	Primary	**118 (83.1)***
	Secondary	24 (16.9)
Religion	Catholic	**108 (76.1)***
	Protestant	26 (18.3)
	Traditional	5 (3.5)
	Born Again	3 (2.1)
Marital Status	Married	**93 (65.5)***
	Single	32 (22.5)
	Cohabiting	8 (6.5)
	Separated	5(3.5)
	Widowed	4 (2.8)
Number of children	0	**48 (33.8)***
	1-3	33 (23.2)
	4-6	36 (25.4)
	Above 7	25 (17.6)

*denotes the majority in the group.

Most clients attained primary education 118(83.1%), a majority were catholic 108(77.1%), and married 93(65.5%). There were 48(33.8%) of clients who had no children, 33(23.2%) had

between 1-3 children, 36(25.4%) had between 4-6 and 25(17.6%) had more than 7 children. The circumstances that led to suicide behavior are presented in Table 4.9. Among the reasons for suicide behavior, the reason pertaining conflict was 47(33.1%), pertaining anger 32 (22.5%), with chronic disease 23 (16.2%) and with loss 21(14.8%) were over represented. Conflict here covered disagreement over land, property (produce or animals), promiscuity and other domestic disagreements. Diseases included having an HIV positive result, chronic tropical ulcers, elephantiasis, epilepsy and paralysis. Anger here included instances where there was self-blame; annoyance after losing money to alcohol binge, impotence, consecutive death of children, discovering a spouse on ARV, denial of sex and first wife opposing marrying second wife.

Table 4.10, *Suicide behavior, means and effects and VHs follow-up outcomes*

Variable	**Category**	**N (%)**
Reason for suicide behavior	Conflict	**47 (33.1**)
	Anger	32 (22.5)
	Disease	23 (16.2)
	Loss	21 (14.8)
	Failure	9 (6.3)
	Violence	5 (3.5)
	Neglect	3 (2.1)
	Infection	1 (0.7)
	Revenge	1 (0.7)
Means to the behavior	Poison	**58 (40.8)**
	Hanging	27 (19.0)
	Communication	17 (12.0)
	No plan	14 (9.9)
	Overdose	10 (7.0)
	Not known	8 (5.6)
	Fire	4 (2.8)
	Gun	1 (0.7)
Effects and Follow-up Outcomes	Recovered	**91(64.1)**
	Recovering	17 (11.0)
	Separated	1 (0.7)
	Died	33 (23.2)

Loss here included instances where a house burns with all belongings, bad loans, squandering school fees on alcohol, burglary, grief and loss of motorcycles purchased through loans or land sale. There were also instances where victim complained of neglect, infection and others just wanted to take revenge for perceived hurts done on them.

The methods used by persons who died by suicide and those who attempted were documented. From the findings, majority used poisoning 50 (40.8%), hanging 27 (19%) and suicide communication 17 (12%). Other victims tried drug overdose while others had no plans or for others, the reasons for suicide behavior were not known. The outcomes of these suicide behaviors were that 91(64.1%) fully recovered, 17(11%) are recovering under treatment or being followed up with counseling and 33(23.2%) died. Interpretation for the 64.1% who recovered relied first on the Village Helpers' ability in identifying problems at household level or accepting referred cases with interest and willingness to help. Secondly, the parish community ability to know that one of their own was a helper and that they would consult immediately they saw or heard of a problem. Thirdly the Village Helpers were motivated by the positive response of their actions; when they notice the behavior of counselee change. They also received feedback from those who had recovered; words indicative of positive change and appreciation. The counselee and their relatives would give materials for appreciation like chicken, goats or even money. These findings were important for enhancing sustainability. The Village Helpers felt this work was satisfying as from this quotation;

'*I was a VHT, I would give malaria drugs, de-worming tablets and children medicines blindly…… but helping one in distress……., you see the change and become happy. Then people appreciate you..... the client appreciates and trusts you..... becomes a friend….you feel good. I feel important, the way the community see me has changed, even me I never used to be like this…I feel important…….. I will continue to help'*.

This realization possibly drove the desire to sustain the intervention even beyond the project closure. To some Village Helpers, position of elective leadership was proposed to them and some accepted to become visible in the community and to lead in elective positions. For VHs, this was a bonus for recognition and a leverage to carry on the good work.

4.11 Abilities of VHs

Village Helpers documented 121 cases with potential risk factors to suicide behaviors. The factors were grouped under mental illness, chronic illness, violence and conflicts, alcohol use, lack of support and suicide communication. They collected demographics, circumstances leading to individual consultation, taking action and assessing outcomes. In this group of cases, there were males 60 (49.1%) and females 61 (50.9%), Catholics 97(80.2%), primary level of education 100(82.6%), married 70(57.9%) with an average of 4-6 children while others were single 31(25.6%).

Table 4.11, *Demographics for participants seeking help from VHs by variable, category, number and percentages*

Variable	**Category**	**N (%)**
Gender	Male	**60** (49.6)
	Female	**61 (50.4)***
Age	Less 20	15 (12.4)
	21-35	**48 (39.7)***
	36-45	35 (28.9)
	46-55	10 (8.3)
	Above 56	13 (10.7)
Religion	Born Again	7 (5.8)
	Catholic	**97 (80.2)***
	Protestant	17 (14.0)
Education	Primary	**100 (82.6)***
	Secondary	20(16.5)
	Tertiary	1(0.9)
Marital Status	Single	31(25.6)
	Married	**70(57.9)***
	Cohabiting	6(5)
	Separated	7(5.8)
	Widowed	7(5.8)

Number of Children	No child	40 (33.1%)
	1-3	14 (11.6%)
	4-6	**55 (45.4%)***
	Above 7	12 (9.9)

*majority in a category

Their age ranged from 9-86 years (*M*=35.6, *SD*= 14.6). The circumstances requiring consultation were generally alcohol use, chronic illnesses, mental illness including epilepsy, suicide treats, loss of support and conflicts. Alcohol use was co morbid with spouse abuse and aggression. Chronic illness included HIV, hypertension, diabetes, ulcers and other pains. Mental illnesses had depression, anxiety, psychoses including epilepsy. Suicide threats involved utterances of killing or injuring oneself. This too was associated with suicide communication where utterances of going far places or leaving things for others were heard; sometimes this was coupled with giving out belongings or visiting lost relatives. Loss of support included reduced support to provision of food, school fees and other livelihoods to spouse and/or children. And conflicts included all those activities that resulted into disagreement, land conflicts, relational conflicts that would result in divorce or separation and those that would result in passive or active aggression.

The Village Helpers were capable of solving and disposing 62 (51.2%) of the cases at household level including 9 (7.4%) who did quit alcohol abuse. They were able to refer 34(28.1%) out of which 8(6.6%) were recovering, 7(5.8%) were on treatment and were being followed up. The outcome of separating couples was successful in one case (0.8%), (see Table 4.10). Generally speaking the Village Helpers were successful in all the reported cases. They responded following the way they were trained; i.e. by counseling, referring, and providing support for those that needed it.

Table 4.12, *Consultation and outcomes for household cases*

	Reasons	**N (%)**		**Outcomes**	**N (%)**
Reason for consultation	Violence	32 (26.4)	*Outcomes of consultation*	Recovered	62 (51.2)
	Mental illness	27 (22.3)		Referred	34 (28.1)
	Conflict	18 (14.9)		Quit alcohol	9 (7.4)
	Chronic illness	18 (14.9)		On treatment	7 (5.8)
	Alcohol	10 (8.3)		Recovering	8 (6.6)
	Loss of support	10 (8.3)		Separated	1 (0.8)
	Suicide talk	6 (4.9)			

Table 4.12, shows cases that were non suicide behavioral for which Village Helpers were consulted with percentages. The outcome column lists the percentage of beneficiaries from the intervention. This table provides evidence that the VHs were able to position themselves for a range of household psychosocial difficulties including chronic diseases and mental illnesses. The cases were handled at individual or small group level thus prompting the clients to take action. The outcomes were overwhelmingly motivational to the VHs and these outcomes became issues that the villagers would notice and discuss. In this way they spread information about the abilities and successes of the VHs thus creation an aura of importance around them. This is what is sustaining the suicide intervention beyond the life time of the project.

4.12 Suicide Autopsy

There were interviews done on five cases of suicides and four cases of suicide attempts. The finding indicated underlying problems preceding suicide or suicide attempts. Anger was a common underlying problem coming by way of disease, impotence, conflict, violence or constant quarrels in a family either on issues of land inheritance or relationships with widows and orphans. Other sources of anger (*cwer cwiny)* came from felt self weakness to fight for own rights either due to age, poverty and lack of education. Anger also came from failure to fend for children or living with indiscipline children. Often people take alcohol when faced with anger or disappointment that again may result in negative consequences.

Table 4.13, *Autopsy interviews, informant, circumstances and suicide behavior.*

SN	Age and Sex	Informant	Notes on circumstances	Suicide behavior/ outcomes
1	38M	Wife	Impotence, alcohol, threats of suicide, had no one to blame	Ingested anti epileptics and died the next day
2	45M	Father	Complained of witchcraft, had chronic wounds, alcohol, anger	Ingested tick poison and died same day
3	17M	Father and Village Helper	Family quarrel, father threatens with a knife, mother abandons 7 children	Hanged the same morning on mango tree nearby
4	17M	Father and police	Mother left seven siblings to his care. Stole to fend for six siblings, Father beats him	Hangs with a note that stealing ended with him
5	33M	Mother and wife	Conflict with mother, land issues, alcohol	Hanged in house after 2yrs of threats.
6	56M	Self	Quarrels with wife and unmarried rowdy daughters, blamed for taking 2nd wife	Ingested rat poison, Recovered, complains but ok
7	32M	Self and Mother	Kony's soldier, reacted to wife complain of using her money to marry 2nd wife	Took 100 capsules of amoxicillin than wife grabbed throat. Was saved
8	43 F	Self	Remarried, drinking, quarrels with unruly 2 sons	Bought termite poison and kept. Confessed and gave it away to VH.
9	34M	Self	Orphan, raised by G/mother, land conflict, amputated leg	Saved from a burning hut, complains but now ok
10	30F	Self	Widowed of suicide, had difficulty fending for children	Blames self for not saving husband from suicide. He threatened for 2yrs and died of suicide. Was happy we came to see her.

The other findings from the interviews were suicides which were rather impulsive and difficult to anticipate and prevent. Although there were other suicide which could have been prevented, lack of understanding of suicide threats prevented others from offering help. They were only able to remember the communication event after the suicide was committed.

It was found that people can be persuaded to abandon suicide course. The case of a lady who volunteered termite drugs was through counseling by a Village Helper. The Local Council Chairman II was also persuaded to abandon suicide course though he still complained of his rowdy daughters conniving with their mother to make life difficult for him.

The interviewees appreciated us for talking to them and giving them new insights, there were instances where some emotionally broke down and cried especially when asked about their life plans. With many suicides happening in N. Uganda, the bereaved lack opportunity and space to share their pain. Tradition prohibits one to cry or to decently bury a person who died by suicide yet suicide causes shame and stigma; the reason the pain accumulate to require a helping hand.

4.13 Conclusion

The following innovative conclusions were drawn from the findings of this study

1. The training of Village Helpers in recognition of common mental health problems including recognition and management of sources of personal distress had beneficial effects on their wellbeing thus enhancing their motivation to help others.
2. Village Helpers regardless of level of education could be trained to combat common mental health problems including suicide behavior in the communities in which they live.
3. Using Village Helpers can enhance sustainability of health related program due to motivational rewards and positive feedbacks they receive from the community
4. Suicide and suicide attempts can be prevented in the community Gulu District using human resources drawn from parishes of abode.
5. Primary Health Care providers can also be used to sensitize communities to avert suicide behavior and people would listen and heed.

Innovation

This study demonstrated that community members regardless of level of education and income could be cheaply trained to provide mental health care supports that can augment severe shortage of mental health care providers as sited in the background of this study. If this study is expanded and the findings adopted, mental health treatment gaps globally could be addressed and health behavior of all communities worldwide could be improved.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This section discusses the findings from training Village Helpers and its effect on suicide behavior prevention, the suicide behavior intervention in Gulu and Amuru Districts, and the performance of Village Helpers during the intervention.

5.2 Findings from assessment of Village Helpers

The objective to assess Village Helpers was to ascertain if they had psychological challenges likely to hinder their ability to work with distressed people with an aim of strengthening them through counseling or drug treatment. I found that the overall RISLE mean scores moderately decreased while the overall SOC mean scores moderately increased between pre and posttest among the Village Helpers at training. RISLE measures depression and suicidality (Ovuga, 2005) while SOC measures ability to cope with life adversities and stay healthy by using resistance resources (Antonovsky 1979, 1987). The inverse relationship between RISLE and SOC indicate improved psychological health and improved quality of life of the Village Helpers (Henje Blom et al; 2010; Ovuga, 2005 p52, Antonovsky, 1993). The Village Helpers all lived in the Northern Uganda during the war between Kony rebels and the Army of Uganda. They all had challenged economic and psychological background. The VHs found explanations and relief to their personal experiences from the training. Similar experiences of decrease in emotional distress were found by Höjdahl, Magnus, Mdala, Hagen and Langeland (2015) in women who were completing motivational program in a prison setting where their SOC had increased. The experience of relief became the motivation for the Village Helpers to strive to help others in situations they previously had encountered. This motivation may explain why the Village

Helpers have since decided to continue with the helping work without pay beyond the project timeline; a sustainability indicator.

It was found that although there was overall increase in mean scores of SOC, it was SOC component *Manageability* which increased significantly (t = -2.406, p=0.019), the component *Meaningfulness* decreased significantly (t = 4.620, p=0.000), while the component *Comprehensibility* also decreased but not significantly (t = 0.899, p= 0.373). SOC can be influenced overtime by methods like empowerment, psychotherapy groups, intervention programs, patient education or training (Apers, Rassat, Luyckx, Oris et al., 2016). Where SOC scores are to increase, it is probable that all the components of SOC should increase as in the study by Fagermoen, Hamilton and Lerdal (2015) where all the components of SOC increased significantly one year after patient education course. In this study the component Comprehensibility which is about the perception of whether the information is structured and predictable decreased (ns). Where a fund of knowledge is lacking, a feeling comprehensibility can be compromised (Apers, et al., 2016) and as in this study it was probably due to low level of education of the Village Helpers. The component manageability is about perception of the resources at disposal to meet the demands at hand and it is related to a person's sense of control (Apers, et al., 2016). In this study, the component manageability increased significantly where an item on setting clear goals increased 100%. Empowerment by way of training is a way of instilling self control and control over events where a person can scan challenges with available resources and have a feeling of manageability. Meaningfulness is about perception that life makes sense emotionally or that it is worthwhile to cope with the perceived challenges (Apers, et al., 2016, Langeland, et al., 2015). In this study meaningfulness deceased significantly unlike in the study by Langeland, Riise, Hanestad el al., (2006) where lesser change was seen in meaningfulness or in Fagermoen (2015) where meaningfulness increased significantly.

Participants in this study probably valued managing their challenges rather that attaching meaning or understanding to them; an orientation probably influenced by long life in war zones. In this study manageability, as a SOC component had a mediating role (Rohani, Abedi, Sundberg and Langius-Eklöf, 2015) in the changes in psychological and social functioning of the Village Helpers as seen from their abilities in handling a variety of cases at household level. Hakanen, Feldt and Leskinen (2007) found that people with high SOC were cognitively and emotionally capable of assessing the nature of the problem and were willing to confront it. This is also confirmed by Benz, Angst, Lehmann and Aeschlimann (2013) in a prospective cohort study of rehabilitation of osteoarthritis of the hip and the knee that a strong SOC is correlated with psychosocial and psychological health.

5.3 Findings from Suicide intervention

In this study death by suicide and suicide attempts decreased in Gulu and Amuru Districts respectively. However the numbers and the pattern suicide and suicide attempts varied a great deal over the intervention period.

5.4 Suicide in Gulu and Amuru Districts

It was found that death by suicide dropped by 36.8% and 66.7% in Gulu and Amuru Districts respectively in 2015 and 2016. Micro-ecological (Kinyanda, 2011) and methodological differences accounted for the 29.9% difference between the two districts. The reasons for large difference are likely to be the following. 1) Land conflicts within families were fewer in Amuru due to low population density. 2) Conflicts leading to domestic violence were lower compared to that of Gulu. 3) Methodologically, data was collected at parish level and at point of event in Gulu district, however in Amuru data was collected from health centers through reports given to the Health Worker on request. 4) Not all parishes in Amuru had health centers making some data be

missed from those parishes. 5) Additionally, suicide and suicide attempts attract arrests and some people may conceal it. 6) Transfers of Primary Health care providers from one health unit to another although within Amuru, might have affected interest in and continuity of data collection as well.

Reduction of suicide rates of this magnitude is not common world over due to varying suicide rates among countries (WHO, 2014) and presence of vulnerable or marginalized groups as described by Clifford, Doran and Tsey (2013). However, Knox, Litts, Talcott, Feig and Caine (2003), did a 10 year suicide prevention study in the US Air Force between 1990 and 2002 and reported 28% reduction in suicides. Japan's 2002 National Suicide Prevention Plan had hoped to reduce suicide by 30% in ten years (McCurry 2006). However Ono, Sakai, Otsuka, Uda, Oyama, et al. (2013) examined the effectiveness of a community based multimodal intervention for suicide prevention in rural areas with high suicide rates and compared to prevention as usual control group in Japan. They reported a 7% decrease in suicide in the intervention group in 3.5 years. In India, Patel, Weiss, Chowdhray, Naik. Pedneker et al. (2011) evaluated lay health worker led intervention for depressive and anxiety disorders and reported 36% reduction in suicide attempts in 12 months. In Hungary, Szekely, Thege, Mergl, Birkas, Rozsa et al. (2013) using European Alliance Against Depression (EAAD) concept, implemented a suicide prevention program in Szolnok and reported a suicide decline of 56.1%, 51.4% and 60.1 for 2005, 2006 and 2007 respectively. The rate of decline of suicides was same for men and women. Although the percentage reduction of these studies is comparable, first, the duration of the studies was different making the reduction in my study appear large; second, there were methodological variations especially in population selection and in procedures used. Taking all these into account, suicide intervention in Gulu which was Village Helpers led appeared slightly superior to that of Amuru, led by Primary Health Care providers.

The gender ratio female to male was 1:3.5 Gender ratio of suicides reported in an illustrative review by Hamilton and Klimes (2015) put the female to male ratio at 1:4. The two results still confirm that males die by suicide four times more than females.

There was a seasonal variation of suicide in my study where suicide rate increased during dry weather and during periods of low food supply. Ovuga (2005 p80) collected data on suicide ideation from Bugiri and Adjumani in March -April 2002 and reported 36.1% life time and 13.1% past week suicide ideation. It is therefore not established whether dry weather has a bearing in causing suicide in my study.

Dos Santos, Tavares and Barros (2016) analyzed suicide rates and economic cycle in Portugal between 1910 -2013. They found a strong association between a decline in economic growth and increase in suicide rates in the whole population and that female suicides were more open to economic cycles than that of men.

5.5 Suicide attempts in Gulu and Amuru Districts

There was a cumulative 66.3% and 54.7% reduction in the rate of suicide attempts in Gulu and Amuru respectively in 2015 and 2016. As in death by suicide above, the difference of 11.6% could be due to the same factors discussed in suicide section. However the methods of suicide attempts in Amuru were more of poisoning which ended up in health center emergency units. Other types of suicide attempts were not readily volunteered possibly due to being deemed criminal. Methods of suicide attempts in Gulu included hanging, burning in huts, drowning, drug overdose and poisoning. These details were available due to the vigilance of Village Helpers who recorded all the information around the circumstances regarding any suicide behavior event; a skill the Primary Health care providers lacked due to competing priorities in Health Centers.

Comparing the suicide rates after interventions, Ono et al. (2013) reported a slight decline of suicide attempts (p=0.524) when analyzing the effectiveness of multimodal community intervention program to prevent suicide and suicide attempts in Japan. Ahmadi & Ytterstad (2006) in studying prevention of self-immolation by community based intervention in Iran reported a decline of 57% (p=0.07) in immolation attempts between 1999 -2003. Nakanishi, Endo and Ando (2017) examined the trend of deliberate self-harm with reference to National Suicide Data for 1996-2014 in Japan and found that 8.5% self-harm (suicide attempts) were synchronous with the number suicides over time and that there wss overlap between deliberate self-harm and suicide intentions. Dos Santos et al. (2016) reported a cyclic nature of suicide attempts while analyzing suicide attempts patterns in Portugal; pointing to those suicide behavior interventions may not have lasting effects. Fountoulakis, Gonda and Rihmer (2011) in their review of suicide prevention through community intervention reported that interventions report change but of short duration since these changes do not reach the targeted persons; the depressed or the anxious and that they did not establish community support networks to effectively reduce suicide behavior rates. Community support can enhance ownership and sustainability. In my study, Village Helpers are established and resident community members capable of maintaining the gain of 64.9% drop in suicide attempts they have brought about. This was also evident from the quotation provided proving motivation and willingness to sustain preventive momentum.

Gender differences holds for suicide attempts as well. In this study female to male ratio was similar both before and after the intervention at 1:1.5 making men attempt suicide more that women unlike in most literature where females attempted suicide more than males.

The factors associated with suicide and suicide attempts vary widely between developed and developing countries (high income and middle-low income countries). Poverty, lack of social networks, relational problems, mental illness and alcohol abuse and impulse control are common

factors in developing countries. Nock, Hwang, Sampson, Kessler, Angermeyer, Beautrais et al. (2009) while doing cross-national analysis of the associations between mental disorders and suicidal behavior, concluded that significant disorders associated with suicidal behavior were anxiety and lack of impulse control. Other factors like lack of gainful employment and lack of supportive social networks were indicated as well.

5.6 Evaluation of the village helper's performance

The training of Village Helpers provided them with abilities to identify and follow through cases from households, from within the families and from the whole parish community. Initially the primary intention of the training was to prepare the Village Helpers to pick and respond to suicide communication events (Owen, Belam, Lambert, Donovan, Rapport, & Owens 2012). However, the training was expanded to teach abilities to identify and respond to all conditions that could bring disharmony in households and the community; conditions which may be recipes for suicide behavior.

From table 4.10, there is a list of conditions the Village Helpers identified. They included violence, conflict, mental illness (epilepsy, depression, anxiety and alcohol abuse), chronic illnesses, lack of support, and suicide communication. The VHs worked on these case by case and were able to resolve 51.2% of the case load, describing them as recovered, meaning a consensus was reached and hope was restored with the client and the case was closed. The other 28.1% and another 5.8% of the cases were on their way to recovery. Others had quit alcohol use while others were detected with suicide communication. The literature on prospective studies which evaluated the performance of Village Helpers is scarce. However, Gilat, Tobin and Shahar (2012) evaluated responses of trained volunteers and lay individuals providing online support and found that trained individuals use a range of strategies (emotional focus and

therapeutic like cognitive focused strategies) while lay individuals used more of self-disclosure in responding to distress calls. Literature on peer-delivered interventions for severe mental illness and depression report its similarity to intervention delivered by professionals in reducing symptoms (Fuhr, Salisbury, De Silva, Atif, et al., 2014). They conclude that there is weak evidence that peer-delivered interventions can have positive impact on clinical and psychosocial outcomes in people with severe mental illness.

Patel, et al., (2011) evaluated lay health worker led intervention for depressive and anxiety disorders in India and concluded that trained lay health employees working within a collaborative-care model can reduce prevalence of common mental disorders, suicidal behavior, psychological morbidity and disability days among those attending public primary care facilities. They posted a 30% decrease in prevalence of common mental illness and 36% reduction on suicide attempts/plans among 2796 participants in 12 months. The difference between Patel et al. (2011) and my study lie in level of education and in gainful employment of participants involved in the intervention. Patel's et al. study had participants who were educated and employed while mine had Village volunteers, unemployed and with low education yet with a motivation to help their community. These disparities and others not mentioned here are worth noting if we value creating community sustainable health outcomes with aim of answering emerging objectives of the global mental health movement towards reducing treatment gap. Kirmayer and Pedersen (2014) support this view by questioning the current focus on mental disorders instead of focusing attention to social structural determinants of health seen as the root causes of Global Health disparities.

5.7 Findings from suicide autopsies

The suicide cases I interviewed around happened fast, with fury of anger, impulsive and was difficult to respond to and prevent. Some happened because of the alcohol influence. Kizza, Hjelmeland Kinyanda and Knizek (2012) reported that alcohol influenced 16/20 suicide cases they studied. Alcohol consumption is prevalent in N. Uganda and tends to fuel conflicts and violence that are common in this region including abetting suicide and suicide attempts. Suicide and suicide attempts in N. Uganda appears to be happening due to a multitude of factors like disempowerment and disenfranchisement (Kizza, Knizek, Kinyanda & Hjelmeland 2012, Nov) Other challenges are due to changing traditional gender roles (Kizza, Knizek, Kinyanda & Hjelmeland, 2012, Sep) that make it difficult for men and women to stay in relationships.

Interviewing people about suicide and suicide arouses painful memories, guilt, self reproach and anger (Kizza, Hjelmeland, Kinyanda & Knizek 2011). People I interviewed appreciated me saying it felt good talking with me, they felt much better for no one had shared and provided insights to their pains as I did. Kizza et al (2011) found that not much has been done to help the bereaved by suicide, yet if done this community would stand against stigma and notion that suicide run in families in order to prevent suicide and suicide attempts. Kizza et al, (2011) then recommended a community based mental health and primary care approach to prevention, which prompted this study.

5.8 Conclusion

1. Suicide could be prevented in the community of Gulu District by targeting multiple risks.
2. Using experientially trained and psychologically motivated Village Helpers, most of the health related and psychosocial problems could be mitigated.
3. Village Helper approaches are the way to go for mobilizing resistant health seeking and anxious and depressive people to receive care.

5.9 Limitation of the study

The following were the limitation of the study

1. For the stability of SOC, the sample size of 64 is too small for drawing any meaningful causal effects and does not provide a good ground for generalization.
2. Data collection by Primary Health Care providers from health centers in Amuru might have omitted suicide or suicide attempt cases from distant places or from parishes with no health centers. Additionally, Primary Health Care providers might fail to enquire about cases due to heavy work load experienced in rural health centers. Due to its criminal nature some people may refuse or fear to volunteer information on suicide behavior to avoid arrests and other negative social consequences.
3. Methodological rigor was affected by Village Helpers' selection and health center coverage. Not all parishes had a Village helper due to a variety of reasons. Secondly not all parishes had health centers, thus limiting the number of suicide behavior cases that would have been collected and others cases that could have been referred.

5.10 Recommendation

1. The use of trained Village Helpers is recommended to work alongside Primary Health Care providers for every parish for prevention of a range of morbidities and psychosocial difficulties.
2. Change of policy to enable Primary care providers be trained in provision of mental health care and that psychotropic medicines should be allowed to reach lower health units. This may also call for modifying health training curricular for a variety of primary care providers to include training in providing mental health services.
3. Village Helpers' concept to be used in Global Mental Health campaign to reduce mental health treatment gap and improve health outcomes in communities.

Dissemination:

There were two oral presentations in conferences organized by Gulu University at Bomah Hotel, Institute of Psychiatry, University of South Denmark at Odense City Hall and another organized by College of Health Sciences, Makerere University at Hotel Africana. There were also tree publications and these details are listed below.

Conferences:

a. Is suicide preventable in Gulu, Northern Uganda, Annual Scientific Conference, Gulu University at Bomah Hotel, Nov, 2017
b. Is suicide preventable in Gulu, Northern Uganda, Suicide Day-2017 at City Hall, Odense, Denmark.
c. Is suicide preventable in Gulu, Northern Uganda, Annual Scientific Conference, College of Health Sciences, Makerere at Hotel Africana, Kampala, Nov, 2018

Publications:

d. **Oboke, H., et al** (2017) Impact of Mental Health Training on Mental Wellbeing of Lay Counselors in Northern Uganda. *Jacobs Journal of Community Medicine* 3(1):031.

e. **Oboke, H. & Susan Reynolds Whyte** (2019) Anger and Bitter Hearts: The Spread of Suicide in Northern Ugandan Families *Ethnos Journal of Anthropology* 85(4) 612-628, Doi; 10.1080/00141844.2019.1629982 pages 1-17.

f. **Oboke, H. et al** (2020) Preventing Suicide Behavior using Village Helpers in Post conflict Northern Uganda, *African Journal of Traumatic Stress* ()

References

Abbo, C. (2011). Profiles and outcome of traditional healing practices for severe mental illnesses in two Districts of Eastern Uganda, *Global Health Action,* 4,7117 doi:10.3402/gha.v4i0.7117

Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.

Amone-P'Olak, K., Lekhutlile, T. M., Meiser-Stedman, R., & Ovuga, E. (2014), Mediators of the relation between war experiences and suicidal ideation among former child soldiers in Northern Uganda: the WAYS study. *BMC Psychiatry*, 14: ISSN 1471-244X

Antonovsky, A. (1987). *Unraveling the mystery of health. How people manage stress and stay well*. San Francisco, CA, Jossey-Bass.

Antonovsky, A. (1993). The structure and properties of the Sense of Coherence scale. *Social Science & Medicine,* 36, 725-733.

Apers, S., Rassat, J., Luyckx, K., Oris, L., Goosens, E., & Budts, W. (2016). Bringing Antonovsky's salutogenic theory to life: A qualitative inquiry into the experiences of young people with congenital heart disease, *International Journal of Qualitative Studies on Health and Wellbeing*, 11(29346) – http://dx.doi.org/10.3402/qhw.29346

Bandura, A. (1977). Self-efficacy Theory: Towards a unifying a theory of change. *Psychological Review*, 84, 191-215

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freedman

Beautrais, A. L., & Mishara, B. L., (2008). World Suicide Prevention Day: "Think Globally, Plan Nationally, Act Locally," *Crisis,* 29(2), 59-63.

Benz, T., Angst F., Lehmann, S., & Aeschlimann, A. (2013). Association of sense of coherence with physical and psychosocial health in the rehabilitation of osteoarthritis of the hip and knee: a prospective study, *BMC Musculoskeletal Disorders,* 14(159).

Bolla, J., (2002), *Attempted suicide in Adjumani District*, Dissertation, Ministry of Education and Sports, Kampala

Bostwick, J.M., and Pankratz, V.S. (2000). Affective disorders and suicide risk: A re-examination. *American Journal of Psychiatry*, 157, 1925-1932. [PubMed: 11097952].

Chin, R. & Benne, K. D. (1976). *General strategies for affecting changes in human systems*. In Bennis, W. G., Benne, K. D., and Chin R. (Eds.) Planning change (3rd Ed), New York: Rinehart and Winston.

CDC-DVP (2014). *Promoting Individual, Family and Community Connectedness to Prevent Suicidal behavior.* In Strategic Direction for the Prevention of Suicidal Behavior, 4770 Buford Hwy, NE, MS F-64 Atlanta GA 30341-3717. www.cdc.gov/injury.

Chatterjee, S., Naik, S., Dabholkars H.A, H., balaji, M., Koschorke, m., Varghese, M., Thara, R., Weis H.A., Williams, P., McCrone, P., Patel, V., and Thrniccroft G. (2014). Effectiveness of a community-based intervention for people with schizophrenia and thie care givers in India (COPSI): a randomized controlled trial, *The Lancet*, 383, 1385-94, http://dx.doi.org/10.1016/S0140-6736(13)62629-X.

Christens B. D., & Freedman D.A. (2014). Community Organization and System Intervention, in Gullotta, T.P and Bloom M. (eds.) *Encyclopedia of Primary Prevention and health Promotion,* doi: 10.1007/978-1-4614-5999-6, © Springer Science + Business Media, New York.

Clifford, A. C., Doran C. M., & Tsey, K. (2013). A systematic review of suicide prevention interventions targeting indigenous peoples in Australia, United States, Canada and New Zealand, BMC Public health, 13(463), doi:10.1186/1471-2458-13-463.

Currier, D., & Mann, J. J., (2008), Stress, Genes and the Biology of Suicide Behavior, *Psychiatry, Clinical, North America*, 31 (2), 267-268, doi:10.1016/j.psc.2008.01.005.

Doessel, P. G., & Williams B. F. G. (2010). The economic argument for policy of suicide prevention, *Suicidology online*, 1, 66-75

Dokkedahl, S., Oboke, H., Ovuga, E., & Elklit, A. (2015). ICD-11Trauma Questionnaires for PTSD and Complex PTSD: Validation among Civilians and Abducted children in Northern Uganda. *Journal of Psychiatry* 18(6)

Dokkedahl, S., Oboke, H., Ovuga, E., & Elklit, A. (2015). The Psychological Impact of war and abduction on children in Northern Uganda: A Review. *International Journal of Mental Health*, 1(2)

Dolan, C. (2011). *Social Torture: A case of Northern Uganda 1986-2006*. Berghahn, New York.

Dos Santos, J. P., Tavares, M., & Barros P. P. (2016). More than just numbers: Suicide rates and economic cycle in Portugal. *SSM -Population Health*, 2, 14-23. http://dx.doi.org./10.1016/j.ssmph.2015.11.004.

Ericksson M., & Lindström, B. (2015), Validity of Antonovsky's sense of coherence scale: a systematic review. *J. Epidemiol Community Health* 2005; 59:460–466. doi: 10.1136/jech.2003.018085

Fagermoen, M. S., Amilton, G., & Lerdal, A. (2015). Morbid obese adults increased their sense of coherence 1 year after a patient education course: a longitudinal study. *Journal of Multidisciplinary Healthcare,* 8, 157-165.

Fishbein, M., & Yzer M. C. (2003). Using Theory to Design Effective Health Behavior interventions, *Communication Theory*, 13(2) 164-183

Flensborg-Madsen, T., Ventegodt, S., & Marrick, J. (2005). Why is Antonovsky's Sense of Coherence not correlated to Physical Health? Analyzing Antonovsky's 29-item Sense of Coherence Scale (SOC-29), *The Scientific World Journal,* 5, 767-776

Foster, P. H. (1954). Material on Suicide Assembled 1954-1958, African Studies library, 771 Commonwealth Ave, Boston MA 02215 617-353-3726; www.bu.edu/library/africanstudies

Fountoulakis, K.N., Gonda, X., Rihmer, Z. (2011). Suicide prevention programs through community intervention. *Journal of Affective Disorders*, 130, 10-16

Fuhr, D. C., Salisbury, T. T., De Silva, M.J., Atif, N., Van Ginneken, N., Rahman, A., & Patel, V. (2014). Effectiveness of peer-delivered intervention for severe mental illness and depression on clinical and psychosocial outcomes: a systemic review and meta-analysis. *Soc Psychiatry Psychiatr Epidemiol*, 49; 1691-1702. Doi; 10.1007/s00127-014-0857-5

German, G. (1982). Aspects of clinical psychiatry in Sub-Saharan Africa, *British Journal of Psychiatry,* 121, 461-479.

Golney, R. D., & Fisher, L. J. (2008). Have broad based community and professional education programs influenced mental health literacy and treatment seeking of those with major depression and suicidal ideation? *Suicide and Life Threatening Behavior*, 38 (2) 129-42

Government of Uganda (1995).*The Constitution of the Republic of Uganda,* (Author)

Gribbons, B., and Herman, J. (1997). True and Quasi-Experimental designs, *Practical Assessment, Research and Evaluation*, 5(14) ISSN 1531-7714

Gulu Local Government (Feb 2012). *Planning and Statistical Abstract*, (Author)

Hakanen, J.J., Feldt, T., & Leskinen E. (2006). Change and stability of sense of coherence in adulthood: Longitudinal evidence from the Healthy Child study. *Journal of Research in Personality*, 41, 602-617.

Hamilton, E., & Klimes-Dougan, B. (2015). Gender differences in suicide prevention Responses: Implications for Adolescence Based on an Illustrative Review of Literature. *International Journal of Environmental Research and Public Health*, 12, 2359-2372. Doi: 10.3390/ijerph120302359.

Hjelmeland, H., Kinyanda, E. & Knizek, B. L. (2012). Mental health workers' views on the criminalization of suicidal behavior in Uganda, *Medicine, Science and the Law* 52:148–151.

Holmes, T.H., & Rahe, R.H. (1967)The Social readjustment rating scale, *Journal of Psychosom Res,* 11, 214-218

Höjdahl, T., Magnus, J. H., Mdala, I., Hagen, R., & Langeland, E. (2015). Emotional Distress and sense of coherence in women completing a motivational program in five countries: A

prospective study. *International Journal of Prisoner Health*, 11(3), 169-182. Doi: 10.1108/IJPH-10-2014-0037.

Horje Blom, E.C., Serlachius, E., Larsson, J-O., Theorell, T., & Ingvar, M. (2010). Low Sense of Coherence (SOC) is a mirror of general anxiety and persistent depressive symptoms in adolescence girls – a cross sectional study of a clinical and a non-clinical cohort. *Health and Quality of Life Outcomes*, 8(58): Doi: 10.1186/1477-7525-8-58.

Janz, N. & Becker, M. H. (1984). Health belief model: A decade later, *Health Education Quarterly,* 11, 1-47.

Kinyanda, E., Kizza, R., Levin, J., Ndyanabangi, S. & Abbo, C. (2011) Adolescent Suicidality as Seen in Rural Northeastern Uganda: Prevalence and Risk Factors. *Crisis,* 32(1):43–51.

Kinyanda, E., Wamala, D., Musisi, S. & Hjelmeland, H. (2011). Suicide in Urban Kampala, Uganda: a preliminary exploration, *African health Sciences*, 11(2), 219-227.

Kirmayer, L. J., & Pederson, D. (2014). Towards a new architecture for global mental health. *Transcultural Psychiatry,* 51(6); Doi: 10.177/1363461514557202.

Kizza, D., Hjelmeland, H., Kinyanda, E., & Knizek, B. L. 2012). Alcohol and suicide in post conflict Northern Uganda: a qualitative psychological autopsy study. *Crisis.* 33(2) 95-105

Kizza, D, Hjelmeland, H., Kinyanda, E., and Knizek B. L. (2011). Qualitative psychological autopsy interviews on suicide in post-conflict Northern Uganda: the participants' perceptions, *Journal of Death and Dying* or *Omega* 63(3):235-254.

Kizza, D., Knizek, B. L., Kinyanda, E. & Hjelmeland H. (2012a). Men in despair: A qualitative psychological autopsy study of suicide in Northern Uganda. *Transcultural Psychiatry,* 49(5):696 - 717.

Kizza, D., Knizek, B. L., Kinyanda, E. & Hjelmeland H. (2012b). An escape from agony: A qualitative psychological autopsy study of women's suicide in a post-conflict Northern Uganda. *Int J. Qual Stud Health Well-being*, 5(7) 1-13. Doi 10.3402/qhw.v7i0.18463

Knizek, B. L., Kinyanda, E., Owens, V & Hjelmeland H. (2011). Ugandan men's perceptions of what causes and what prevents suicide. *Journal of Men, Masculinities and Spirituality* 5(1), 4-21.

Klasen, F., Oettingen, G., Daniels, J., Post M., and Hoyer, C., & Adam, H (2010). Posttraumatic Resilience in Former Ugandan Child Soldiers*, Child Development*, 81 (4), 1096–1113.

Knoll, J. L. (2008). The Psychological Autopsy, Part 1: Applications and Methods. *Journal of Psychiatric Practice*, 14 (6), 393-397.

Knox, K.L., Litts, D.A., Talcott, G.W., Feig, J.C., & Caine, E.D. (2003), Risk of suicide and related adverse outcomes after exposure to a suicide prevention program in the US Air Force: cohort study. *BMJ* 327(1376)

Langeland, E., Riise T., Hanestad B.R., Nortvedt, M.W., Kristofferson, K., & Wahl, A. (2006).The effect of salutogenic principles on coping with mental health problems: a randomized controlled trial. *Patient Educ Couns*, 62(2), 212-291.

Langeland, E., Robinson, H.S., Moum, T., Larsen, M.H., Krogstad, A.L., & Wahl, A.K. (2013). Promoting sense of coherence: Salutogenesis among people with psoriasis undergoing patient education in climate therapy. *BMC Psychology* 1(11)

Lasalvia, A., Zoppei, S., Van Bortel, T., Bonetto, C., Cristofalo, D., Wahlbeck, K., et al (2013). Global pattern of experienced and anticipated discrimination reported by people with major depressive disorder: a cross sectional survey. *The Lancet*, 381, 55-62. http://dx.doi.org/10.1016/S0140.6736(12)61379.8.

Lukeman, R, and Fitzgerald, M. (2009). The Ethics of Suicide Research: The View of Ethics Committee members, *Crisis*, 3 (1), 13-19. Doi:10.1027/0227-5910.30.1.13.

Luyckx, K., Goossens, E., Apers, S., Rassart, J., Klimstra, T., Dezutter, J., & Moons, P. (2012). The 13-item sense of coherence scale in Dutch-speaking adolescents and young adults: structural validity, age trends, and chronic disease. *Psychologica Belgica*, 52(4), 351-368 http://dx.doi.org/10.5334/pb-52-4-351.

Naaldenberg, J., Tobi, H., van den Esker, F., & Vaandrager, L. (2011). Psychometric properties of the OLQ-13 scale to measure Sense of Coherence in a community-dwelling older population. *Health and Quality of Life Outcomes*, 9(37). doi:10.1186/1477-7525-9-37.

Manzek, P. J., & Haggerty, R. J. (Eds) (1994). *Reducing the risks for mental health disorders: Frontiers for interventional research*, Washington DC: National Academy Press.

McCurry, J. (2006) Japan promises to curb number of suicide. *Lancet*, 367(383)

Mekonnen, D., & Kebede, Y. (2011). Prevalence of Suicidal Ideation and attempts among individuals attending adult psychiatry outpatient clinic in Gondar, Ethiopia. *African Health Sciences,* 11(1), 103-107

Mishara, B. L., & Weisstub, D. N. (2005). Ethical and Legal issues in suicide research. *International Journal of Law and Psychiatry*, 28(1), 25-41

Morgan, G.A. (2000). Quasi-Experimental designs. *Journal of the American Academy of Child and Adolescent Psychiatry,* 39, 794-796.

Mugisha J, Hjelmeland H, Kinyanda E, & Kizek BL (2011), Distancing: a traditional mechanism of dealing with suicide among the Baganda; Uganda. *Transcultural psychiatry* 48(5) 624-642

Mugisha, J., Muyinda, H., Malamba, S., & Kinyanda, E. (2015). Major depressive disorder seven years after the conflict in northern Uganda: burden, risk factors and Impact on outcomes (The Wayo-Nero Study). *BMC Psychiatry* 15:48.doi: 10.1186/s12888-015-0423- z

Nakanishi, M., Endo, K., & Ando, S. (1017). The Basic Act for Suicide Prevention: Effects on Longitudinal trend in Deliberate Self harm with Reference to National Suicide data for 1996-2014. *International Journal of Environmental Research and Public Health*, 14(104), Doi: 0.3390/ijerph14010104.

Nock, M. K., Hwang, I., Sampson N., Kessler, R., Angermeyer M., et al. (2009). Cross-national Analysis of the Association among mental Disorders and Suicidal Behavior: Findings from the WHO World Mental Health Surveys. *PLos Medicine*, 6(8), e1000123, doi:10.1371/journal.pmed.100123

Oboke, H. (2011). Psychological Consequences of War on Primary Health care providers in Selected Health Centers in Northern Uganda, *African Journal of Traumatic Stress Vol.* 2(2) 109-112

Ono, Y., Sakai A., Otsuka, K., Uda, H., Oyama, H., et al. (2013). Effectiveness of a Multimodal Community Intervention Program to Prevent Suicide and Suicide Attempts: A Quasi-Experimental Study, *PloS ONE,* 8(10): e74902. Doi:10.1371/journal.pone.0074902

Orley, J. (1970). *Culture and mental Illness*, Nairobi, East Africa Publishing House

Ovuga, E. (2005). *Depression and Suicidal Behavior in Uganda: Validating the Response Inventory for Stressful Life Events* (RISLE), Karolinska University Press, Stockholm, Sweden. ISBN-91-7140-350-7.

Ovuga, E., Boardman, J., & Wasserman, D. (2007), Integrating Mental Health into Primary Health Care: Local Initiatives, *World Psychiatry* 6, 60-61

Ovuga, E., & Larroque, C. (2012). Post-Traumatic Stress Disorder-A Northern Uganda Clinical Perspectives in Ovuga, E. (Ed) *Post Traumatic Stress Disorder in Global Context*: page 183-208, Rijeka, Croatia. INTECH Open Publishers

Ovuga, E.B.L. & Mugisha R.X. (1990). Attitudes and psychological characteristics of suicidal individuals, *Crisis*, 11(1), 60-72

Owen, G., Belam, J., Lambert, H., Donovan, J., Rapport, F., & Owens, C. (2012). Suicide Communication Events: Lay interpretation of the communication of suicidal ideation and intent. *Journal of Social Science and Medicine,* 75, 419-428. doi:10.1016/j.socscimed. 2012.02.058

Owens C, Owen G, Lambert H, Donovan J, Belam J, Rapport F, & Lloyd R, (2009). Public involvement in suicide prevention: understanding and strengthening lay responses to distress, *BMC Public Health,* 9(308) 1-9

Oyok, T., & Akello, G. (2011) A comparative Study Of Psychiatric Problems in Selected Conflict and Non-conflict Affected Health Centers in Uganda. *African Journal of Traumatic Stress,* **2**(2), 85-91

Palmer, B.A., Pankratz V.S., and Bostwick, J.M. (2005). Life time risk of suicide in Schizophrenia: a re-examination, *Arch of Gen Psychiatry*, 62, 247-253.

Patel, V., Waiss, H. A., Chowdhray, Naik, S., Pednekar, S., Chatterjee, S. et al. (2011). Lay health worker led intervention for depressive and anxiety disorders in India: impact on clinical and disability outcomes over 12 months, *The British Journal of Psychiatry*, 199, 459-466. Doi:10.1192/bjp.bp.11.092155.

Penal Code Act (1955). Chapter 120, Government of Uganda

Roberts, B. Kaducu, F.O. Browne J, Oyok T and Sondorp E. (2008), Factors associated with post-traumatic stress disorder and depression amongst internally displaced persons in northern Uganda, *BMC Psychiatry*, 8:38, Doi: 10.1186/1471-244X-8-38

Robinson L. S., Shannon H. S., Goldenhar L. M., and Hale A. R. (2012). Quasi-experimental and Experimental designs: more powerful evaluation designs, Archive, Wayback Machine.

Rohani, C., Abedi, H.A., Sundberg, K., & Langius-Eklöf, A. (2015). Sense of coherence as a mediator of health related quality of life dimensions in patients with breast cancer: a longitudinal study with a prospective design. *Health and Quality of Life Outcomes*, 13(195)

Scheerder, D., Reynders, A., Andiessen, K., & Van Audengove, C. (2010). Suicide intervention and related factors in community and health professionals. *Suicide Life Threat Behav*, 40(2) 115-124. Doi: 10.1521/suli.2010.40.2.115.

Sloan, K A. (2015). Death and the City: Female Public Suicide and Meaningful Space in Modern Mexico City. *Journal of Urban History*, 096144214566973

Silove, D., Steel, Z., & Psychol, M. (2006). Understanding Community needs after Disasters; Implications for mental health services. *Journal of Postgraduate Medicine*, 52,121-125

Szekely, A., Konkoly Thege, B., Mergl, R., Birkas, E., Rozsa, S., Purebl, G and Hegerl, U. (2013). How to decrease Suicide Retes in Both Genders? An Effectiveness study of a Community-Based Intervention (EAAD), *PloS ONE*, 8(9), e75081, doi:10.1371/ journal.pone.00775081.

Trippany, R.L., White Kress, V.E., Wilcoxon S.A. (2004). Preventing Vicarious Trauma: What Counselors Should Know When Working With Trauma Survivors, *Journal of Counseling and Development,* 82, 31 - 37

Thornicroft, G., Alem, A., Dos Santos, R. A., Barley, E., Drake, R.E., et al, (2010). WPA Guidance on steps, obstacles, and mistakes to avoid in the implementation of community mental health care, *International Journal of World Psychiatric Association*, 9 (2), 67-77

UBOS. (2016). *National Population and Housing census*, Author

Uganda Bureau of Statistics, (UBOS, 2014). *Uganda population and housing census,* (Author).

Uganda National Council of Science and Technology. (2007). *Guideline for Research involving Humans as Research Participants,* (Author)

Van Orden, K. A., Witte, T.K., Braithwicz, K.C., Selby, E. A., & Joiner, T. E. Jr., (2010), The Interpersonal Theory of Suicide, *Psychological Review*, 177(2), 575-600

Vaughan, Megan. (2012), The Discovery of suicides in Eastern and Southern Africa, *African Studies* 71(2), 234-250

Vijayakumar, L., Pirikis, J., & Whiteford, H., (2005). Suicide in developing countries. *Crisis,* 26(3), 120-124

Vinck, P., Pham, P. N., Weinstein, H. M., & Stover, E. (2007), Exposure to war crimes and Implications for peace building, *Journal of American Medical Association*, 298 (5) 543-554.

Whang, P. L., Fletcher, R.K., & Fawcett, S.B. (1982). Training counseling Skills: An Experimental Analysis and social Validation. *Journal of Applied Behavior Analysis*, 15, 325-334

Winkler, N., Ruf-Leuschner, M., Ertl, V., Pfeiffer, A., Schalinski, I., & Ovuga E. (2015). From War to Classroom: PTSD and Depression in formerly abducted youth in Uganda. *Front. Psychiatry,* 6(2), Doi: 10.3389/fpsyt.2015.00002.

World Health Organization. (2008). *The Global Burden of Disease: 2004 update.* Geneva

World Health Organization (2012), *Operational Guidelines for Ethics Committees that Review Biomedical Research,* Geneva

World Health Organization. (2014). WHO| Preventing suicide: A Global Imperative. http://www.who.int/mental.health/suicide-prevention/world.report.2014/en/.

World health Organization (2017), Global health Observatory, http://www.who.int/gho/en

Yang, B., & Lester, D. (2007). Re-calculating the economic cost of suicide, *Death Studies*, 31, 51-361

Appendices

Appendix 1, Preliminary letter of Ethical Clearance, LHIREC

ST. MARY'S HOSPITAL LACOR

P.O. Box 180 - GULU - UGANDA
Tel: +256 - 471- 432310, Fax: +256 - 471- 432665
Email: info@lacorhospital.org Website: lacorhospital.org

27th August 2014

To **Oboke Henry**

Department of Mental Health, Faculty of Medicine,
Gulu University P.O. Box 166, Gulu
E mail "Henry Oboke" henry.oboke@gmail.com, Mobile: 0782 786 616

LHIREC No. 052/08/14 Is suicide preventable in Gulu district

This is to inform you that Lacor Hospital Institutional Research and Ethics Committee (*LHIREC*) reviewed the above study on the **08th July 2014** and approved it pending minor corrections raised below:

1. You need to expand your study area as this crisis affects the whole Acholi sub region.
2. Consider changing the topic to embrace Acholi sub region.
3. What criteria will you use to select the participants? Will you consider cultural and educational understanding? Ones prominent in society? People who have knowledge in history from cultural background to modernization?
4. How do you deal with stigmatized participants during your study?
5. It would be good to do a comparative study base on three phases i.e. a). Period before 1986, b). Period during the war. C). Period after the war.
6. How much will you compensate for the participants time?
7. Add the contact address of LHIREC Chair in the consent form.

Please respond to queries raised above and get the full approval

Thanks

Dr. Martin David Ogwang

Chairman LHIREC

Logistic Office Kampala: Tel. +256 - 414 - 223014, Fax: +256 - 414 - 223013

Appendix 2, Letter of Ethical Clearance, LHIREC

ST. MARY'S HOSPITAL LACOR

P.O. Box 180, GULU - UGANDA
Tel: +256 - 471- 432310, Fax: +256 - 471-432665
Email: info@lacorhospital.org Website: lacorhospital.org

23rd September 2014

To **Oboke Henry**
Department of Mental Health, Faculty of Medicine,
Gulu University P.O. Box 166, Gulu
E mail "Henry Oboke" henry.oboke@gmail.com, Mobile: 0782 786 616

LHIREC No. 054/08/14 Is suicide preventable in Gulu district

This is to inform you that Lacor hospital Institutional Research and Ethics Committee (LHIREC) reviewed the above research proposal on the **08th July 2014**and approved it pending minor corrections. These corrections have now been made and full approval is therefore granted.

Please note that your study protocol number with LHIREC is: **054/08/14**. Please be sure to reference this number in any correspondence with LHIREC. Also note that your study was first approved by LHIREC on **08th July 2014**and therefore approval expires at every annual anniversary of this approval date. The current approval is therefore valid until **08th July 2015**. If it is necessary to continue with the research beyond expiry date, a request for continuation should be made in writing to the secretary LHIREC.
Continued approval is conditional upon your compliance with the following requirements:

1) No other consent form(s), questionnaire and/or advertisement documents should be used other than the one approved. The approved consent form(s) must be signed by each subject prior to initiation of any protocol procedures. In addition, each subject must be given a copy of the signed consent form.

2) All protocol amendments and changes to other approved documents must be submitted to LHIREC and not be implemented until approved by LHIREC except where necessary to eliminate apparent immediate hazards to the study subjects.

3) Significant changes to the study site and significant deviations from the research protocol and all unanticipated problems that may involve risks or affect the safety or welfare of subjects or others, or that may affect the integrity of the research must be promptly reported to LHIREC.

Please complete and submit reports at completion, termination, or if not renewing the project - send a final report within 90 days upon completion of the study to LHIREC.

You are also advised to register with Uganda National Council for Science and Technology (UNCST).

Yours sincerely

Dr. Martin David Ogwang
Chairman LHIREC

Logistic Office Kampala: Tel. +256 - 414 - 223014, Fax: +256 - 414 - 223013

Appendix 3, Letter of Research Approval, UNCST

Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

UNCST

Our Ref: SS 3678

4th February 2015

Mr. Obcke Henry Edonga
Gulu University
Gulu

Re: Research Approval: **Is suicide Preventable in Gulu District?**

I am pleased to inform you that on **12/01/2015**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **12/01/2015** to **12/01/2018**.

Your research registration number with the UNCST is **SS 3678**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project.

As Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the research protocol or the consent form (where applicable) must be submitted to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval prior to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local REC for review with copies to the National Drug Authority.
4. Unanticipated problems involving risks to research subjects/participants or other must be reported promptly to the UNCST. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST review.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.
5. A progress report must be submitted electronically to UNCST within four weeks after every 12 months. Failure to do so may result in termination of the research project.

Below is a list of documents approved with this application:

	Document Title	Language	Version	Version Date
1	Research proposal	English	N/A	N/A
2	consent form	English, Luo	N/A	N/A
3	Informed consent certificate	English, Luo	N/A	N/A
4	Questionnaire	English	N/A	N/A

Yours sincerely,

Leah N Omongo
for: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

cc Chair, Lacor Hospital-REC, Gulu

LOCATION/CORRESPONDENCE

Plot 6 Kimera Road, Ntinda
P. O. Box 6884
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COMMUNICATION

TEL: (256) 414 705500, (256) 312 314800
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Appendix 4, Letter of Renewal of Ethical Clearance, LHIREC

ST. MARY'S HOSPITAL LACOR

P.O. Box 180, GULU - UGANDA
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21st March 2016

To **Henry Oboke**
Gulu University, P.O. Box 166,
Gulu, Uganda
Phone: +256 772 351249

Re: Renewal. LHIREC: 054/09/14, Is suicide preventable in Gulu district

This is to inform you that, Lacor Hospital Institutional Research Committee (LHIREC) has reviewed *Renewal of* **054/09/14**, *dated* **08th July 2015** for the above captioned study. The study renewal has been approved.

Please find revised Informed Consent document enclosed. You will note that the date of approval at the bottom right hand corner has been updated **08th July 2015.** No other consent form should be used. It must be signed by each subject prior to initiation of any protocol procedures. In addition, each subject must be given a copy of the signed consent form. The approval period for the study ends on **08th July 2016**. Any additional modifications in the research protocol, study site/ personnel, or consent form during this time period must first be reviewed and approved by the LHIREC.
Yours

Dr. Martin David Ogwang
LHIREC Chairperson

Enclosures:
a) Approved Informed Consent Documents dated **08th July 2015**
b) Questionnaire **08th July 2015**

Logistic Office Kampala: Tel. +256 - 414 - 223014, Fax: +256 - 414 - 223013

Appendix 5, Consent information and certificate (English)

Consent form (English)

This Informed Consent Form is for participants who are being invited for this research project on: Is suicide preventable in Gulu district?

Principal Investigator (PI): Mr. Henry **Oboke**, Bsc, Msc (MUK)

Mob; 0782 786616,

Email: henry.oboke@gmail.com

Organization; Gulu University, Faculty of Medicine, Box 166, Gulu

PART I:

Information Sheet

We are from Gulu University. We would like to do an intervention research on suicide with aim of reducing death by suicide in Gulu District. We would like to invite you to join our study. We are going to give you as much information as needed for you to make a decision to join or not and you are free to ask questions on anything presented that you do not understand, now or later.

Purpose of the research

The number of people dying of suicide and the number of those attempting to commit suicide has been increasing in Gulu District from the time people returned from camps to villages in 2007/8. We want to understand the reasons and the factors that are causing this unnecessary behavior and use the information to plan an intervention to prevent future suicides. Your participation will require that you cooperate with us, sign a consent form and answer questions that we shall ask you.

Appendix 6, Consent Information and Certificate (Luo)

Consent Form (Luo)

Ngec me konyo dano yee labonge dic pi bedo tye iyi kwed me:

' Deyne romo genge ki Gulu Distrik?'

Lakwed Madit (PI); Mr. Henry **Oboke**, Cim; 0782 786616, Email <henry.oboke@gmail.com>

Aa Ki; Gang kwan madit Gulu, Dul kwan me Yat. Canduk wariga, 166, Gulu

Nyee Mukwongo

Wan wa aa ki igang kwan madit i Gulu. Wamito kwedo kit ma watwero gengo deyne I Gulu. Wa tye kalwongi ni wek idony ikwed man macalo lamii ngec. Wabino mini lok weng muromo me wek okonyi iyee labonge dic me donyo onyo pe me donyo iyi akweda man. Itye agonya me penyo ka ma pe iniang iye maber onyo gimo ducu ma pe itye kaniang iye.

Kony pa Kwed man

Jo ma tye ka deyne ki ma tye katemo deyne gidoko pol i Gulu District cake ma dano gudok paco i 2007/8. Wamito ngeyo tyen lok matye kakelo lakit tim magi wek watii ki lok magi pi yenyo kony mamite pi gengo deyne kombedi ki ii anyim.

Donyo Ikwed man

Watye rweno dono weng mabedo i Gulu, joo ma aa ki kamapatpat,/ magitiyo tic mapatpat wek odony ikwed man kace gum omako gi.

Donyo labonge dic

Institutional Research Ethics Committee
APPROVED
VALID UNTIL
Date: 08/07/2016
PO Box 180 Gulu

Appendix 7, Questionnaire for collecting suicide data

Suicide Study –SS3678: Case Reporting Format per case seen (Book collected at end of Study)

1- **Bio-data**: Name……., Sex……., Age……., Education level……., Religion……., Marital Status……., Occupation……., Number of Children……
2- **Complaint**……..
3- **Nature of complaint**…….(Active suicide, Suicide attempt, mental problem, Violence, Alcohol)
4- **Dates and what was done**……..
5- **Case Status**……(completed, referred, ongoing, pending, difficult)
6- **Describe Status**……..

Name of Officer…….Contact Number…….

Sub-county…….Parish……Health Center……

Table of completed Suicide

2015												**2016**					
Jan		Feb		Marc		Apr		May		June		Jan	Feb	Marc	Apr	May	June
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
July		Aug		Sept		Oct		Nov		Dec		July	Aug	Sept	Oct	Nov	Dec
												M	F	M	F	M	F

Table of Suicide Attempts

2015												**2016**					
Jan		Feb		Marc		Apr		May		June		Jan	Feb	Marc	Apr	May	June
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
July		Aug		Sept		Oct		Nov		Dec		July	Aug	Sept	Oct	Nov	Dec
												M	F	M	F	M	F

Call the following for more info; Henry **Oboke** 0782786616,

Clinical inquires: Mr. William Odur 0772 670 155

Counseling inquires: Ms. Alice Gipwoya 0712 663 347

Appendix 8, Response Inventory for Stressful Life Events (R.I.S.L.E.)

Please complete the following questionnaire by indicating your response to each response item that follows a question or main statement that will describe a situation in which you might find yourself. A question or main statement appears in bold, followed by on to three responses that are numbered. You can indicate the degree to which you agree or disagree with a response item by selecting one of the four answers provided as follows. You can indicate your response by entering only one of these: 1 for "I strongly disagree", 2 for "I disagree", 3 for "I agree" or 4 for "I strongly agree" in the box to the right of each response item as the response applies to you.
If you cannot read and write, I shall read out loud each question and the corresponding response items that follow before you tell me if you agree or not. If you do not understand any of the questions, statements and or response items, please ask and I shall read and explain them to you. Make sure you tell me what you wish me to write down on your own behalf, as your own responses in this exercise are about you telling me how you personally feel, think and react to each question and response item. This is not an examination and there are no wrong answers; each one of your responses is correct to you personally because they indicate how you personally deal with situations in your own life. Take into account your experiences in life, along with how you feel at the present time. Make sure that you respond to each statement by entering or having the appropriate number entered in the relevant box on the answer sheet to indicate the degree of your agreement or disagreement without indicating your name on the questionnaire. You may however, have your name entered on the answer sheet in case you wish to receive help in case much of the issues to be discussed in this interview indicate to you that you need help relating to health.
Response degree:
1= I strongly disagree; 2=I disagree; 3=I agree; I strongly agree
What do you say about the condition of your life?

1. My life is intolerable
2. My life is hell on earth

What is your attitude to the world around you?

3. The world has nothing to offer in life
4. I wish I were out of the world

Suppose that robbers have attacked you at night and that you sustained a deep cut on your head. What would be the extent of your pain?

5. The pain would be so severe that I would wish to die so as to get rid of the pain

Suppose that you were faced with a series of hardships and disappointments. How would you describe your reaction to the latest hardship or difficulty?

6. I would be unhappy for two or more months

In the face of hardships and disappointments how do you normally feel like?

7. I become nervous and unsettled in mind
8. I get confused, not knowing what to do next

During difficult times

9. I wish I could be out of this world

Suppose you were alleged to have been involved in a scandal that shocks your friends and damages your reputation. What would be your reaction?

10. I would immediately kill myself

Suppose that you had been a successful businessperson but quite unexpectedly your business collapses. What would be your immediate reaction?

11. I would kill myself

Suppose that your appeal against the death sentence for alleged murder has failed and you are to be executed (killed) by hanging in the next three months. What would you do?

12. I would worry a lot about it
13. I would kill myself before they do so

Suppose that you have been an unfortunate person in life. As usual another misfortune has struck you again. How would you feel?

14. I give myself one more time and I will kill myself

Suppose your doctor has informed you that you suffer from cancer of the stomach. Despite your intense pain the doctor says there is nothing he/she can do for you. What would be your reaction?

15. I would definitely kill myself if there is no way out

Sometimes I wish I were dead so as to experience the following:

16. Relieve my relatives of my problems
17. Remind my relatives of their responsibilities to me
18. Punish my relatives
19. Teach my relatives a lesson

I have ever felt a strong urge to be tortured or punished in order to

20. Die so as to get away from the problems of the world

Whenever I think about death

21. Death offers the best solution to my problems

Suppose that members of your family or clan do not seem to understand you and think that you are probably joking each time you report to them about your troubles. What would you feel like?

22. I would leave them and go to another town/city or village where I am not known
23. 25 I would kill myself in order to teach them a lesson

Suppose that your lover puts an abrupt end to your love affair. What would be your reaction?

24. I would kill myself

Suppose that your most loved member of the family dies suddenly from a short illness. How would you feel like?

25. I would wish I died with him/her
26. I would wish to kill myself

Suppose that you are now aged 70 years and all by yourself with all your relatives having died or being unable to help you. What would you do?

27. I would kill myself to end my suffering and loneliness

You have read or been informed about the disease AIDS, Suppose that your doctor tells you that you suffer from AIDS. What would be your reaction?

28. I would kill myself before the full features of the disease develop

How much control do you have over your life or over the things that happen in your life?

29. I have lost control over the things that happen in my life

Suppose that you are a person who seems to be unlucky in life. What do you expect to happen to you in the future?

30. I shall wish to be better dead than alive in the future
31. I think I shall rather end my life in the future rather than live with problems

What is your response to each of the following statements?

32. I feel that no one understands or appreciates me
33. I often wonder why I was born
34. My relatives give me no practical assistance in life and they make my life difficult

Appendix 9. The 13-item Sense of Coherence Questionnaire

Here is a series of questions relating to various aspects of your lives. Each question has seven possible answers. Please mark the number, which expresses your answer, with number 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1: if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. Do you have feeling that you don't really care about what goes on around you?

1 2 3 4 5 6 7
very seldom very often or never

2. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?

1 2 3 4 5 6 7
never happened always happened

3. Has it happened that people whom you counted on disappointed you?

1 2 3 4 5 6 7
never happened always happened

4. Until now your life has had:

1 2 3 4 5 6 7
no clear goals or purpose at all very clear goals and purpose

5. Do you have the feeling that you're being treated unfairly?

1 2 3 4 5 6 7
very often very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1 2 3 4 5 6 7
very often very seldom or never

7. Doing the thing you do every day is:

1 2 3 4 5 6 7
a source of deep pleasure and satisfaction a source of pain and boredom

8. Do you have very mixed-up feelings and ideas?

1 2 3 4 5 6 7
very often very seldom or never

9. Does it happen that you have feelings inside you would rather not feel?

1 2 3 4 5 6 7
very often very seldom or never

10. Many people – even those with a strong character – sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1 2 3 4 5 6 7
never very often

11. When something happened, have you generally found that:

1 2 3 4 5 6 7
you overesti- you saw
mated or under- things in the
estimated its right
importance proportion

12. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1 2 3 4 5 6 7
very often very seldom or never

13. How often do you have feelings that you're not sure you can keep under control?

1 2 3 4 5 6 7
very often very seldom

Appendix 10, Questionnaire for suicide autopsy

Questionnaire

The following questions are designed to collect some information about the deceased whom you know very well. It will be read to you as you truthfully respond. Your responses will be noted. We also ask of you to allow us voice record the interview for official use. All information will remain confidential. Do you have any objection? Yes.....No.....

Participant Particulars (let us begin with you)

1. Name.....
2. Age.....
3. Gender.....
4. Education background.....
5. Occupation.....
6. Marital Status.....
7. Relation to the deceased.....
8. Have you ever thought about killing yourself.....
9. If yes, what methods were you considering.....
10. End interview with words that discourage suicide.

Deceased information

Can you tell me about the person who died? When you have completed the story, I will ask specific questions and seek clarifications.

1. Name.....
2. Age.....
3. Gender.....

Appendix 11,

Questionnaire for assessing Village Helpers' performance

Non medical community counselors evaluation

We want to know how you have been doing your work as a community counselor; the cases you have identified, the cases that came to you, (by self and referred), those that you have successfully handled, those that you had difficulty sorting out, those that you have referred and the challenges you met, how you went round them, what you have learned and what else you need to improve you work.

Additionally you will also tell us how you can know that one is about to kill self or thinking about suicide. What reasons or problems must be present for one to think about suicide in your findings? What do you think about people who commit suicide? All your responses are confidential and will not be shared.

We also request permission to voice record this interview, any objection?

Yes……..No……..

Participant particulars (Let us begin by knowing you) Mobile number……

1. Name……
2. Age……
3. Gender……..
4. Education……
5. Occupation……..
6. Marital status……..
7. Number of children……
8. Number of cases handled (total)……
    a. Successful……

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b. Unsuccessful……

c. Referred……

d. Pending……

Case narratives

9. Can you tell me about your success cases ……

   a. How did these cases find you…….(brought, self, referred, identified)

   b. What changed in the cases for you to conclude they were success……

   c. How is this success being maintained……..

10. Tell me about your difficult cases……

   a. What reasons made you conclude these cases were difficult……

   b. What were the things you did when you realized they were difficult cases……..

   c. Number referred……., lost to follow up……, gave up……

   d. Do you have news of any of these cases……

11. What were the challenges you met……

   a. How did you overcome them……

   b. Are there those still pending ……

   c. What are the things you need to be able to overcome these challenges……..

12. What are the things that if present one would commit suicide……

   a. If you were to prevent suicide, how do you go about what you have mentioned…

   b. Which of the things you mentioned are easy to deal with……..

   c. Which of these things mentioned are difficult to deal with……..

   d. How would you strike a balance to save life……

13. What do you think about people who commit suicide……

Appendix 12

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Male suicide Gulu 2015	4.17	12	2.855	.824
	Female suicide Gulu 2015	1.50	12	1.567	.452
Pair 2	Male suicide Gulu 2016	2.92	12	2.610	.753
	Female suicide Gulu 2016	1.00	12	.853	.246
Pair 3	Male attempted suicide Gulu 2015	12.08	12	5.401	1.559
	Female attempted suicide Gulu 2015	8.33	12	2.807	.810
Pair 4	Male attempted suicide Gulu 2016	4.50	12	3.060	.883
	Female attempted suicide Gulu 2016	2.67	12	1.875	.541
Pair 5	Male suicide Amuru 2015	2.08	12	1.782	.514
	Female suicide Amuru 2015	.67	12	.985	.284
Pair 6	Male suicide Amuru 2016	.75	12	1.055	.305
	Female suicide Amuru 2016	.17	12	.389	.112
Pair 7	Male attempted suicide Amuru 2015	3.17	12	2.623	.757
	Female attempted suicide Amuru 2015	3.08	12	3.088	.892
Pair 8	Male attempted suicide Amuru 2016	1.75	12	2.179	.629
	Female attempted suicide Amuru 2016	1.67	12	1.497	.432
Pair 9	Suicide Gulu 2015	5.67	12	2.387	.689
	Suicide Gulu 2016	3.92	12	3.118	.900
Pair 10	Attempted suicide Gulu 2015	20.42	12	7.704	2.224
	Attempted suicide Gulu 2016	7.17	12	4.260	1.230
Pair 11	Suicide Amuru 2015	2.75	12	1.865	.538
	Suicide Amuru 2016	.92	12	1.084	.313
Pair 12	Attempted suicide Amuru 2015	6.25	12	4.901	1.415
	Attempted suicide Amuru 2016	3.42	12	2.968	.857
Pair 13	Suicide Gulu 2015	5.67	12	2.387	.689
	Suicide Amuru 2015	2.75	12	1.865	.538
Pair 14	Suicide Gulu 2016	3.92	12	3.118	.900
	Suicide Amuru 2016	.92	12	1.084	.313
Pair 15	Attempted suicide Gulu 2015	20.42	12	7.704	2.224
	Attempted suicide Amuru 2015	6.25	12	4.901	1.415
Pair 16	Attempted suicide Gulu 2016	7.17	12	4.260	1.230
	Attempted suicide Amuru 2016	3.42	12	2.968	.857

Appendix 13

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Upper	Lower			
Pair 1	Male suicide Gulu 2015 - Female suicide Gulu 2015	2.667	3.939	1.137	.164	5.169	2.345	11	.039
Pair 2	Male suicide Gulu 2016 - Female suicide Gulu 2016	1.917	2.314	.668	.446	3.387	2.869	11	.015
Pair 3	Male attempted suicide Gulu 2015 - Female attempted suicide Gulu 2015	3.750	3.841	1.109	1.310	6.190	3.382	11	.006
Pair 4	Male attempted suicide Gulu 2016 - Female attempted suicide Gulu 2016	1.833	2.758	.796	.081	3.586	2.303	11	.042
Pair 5	Male suicide Amuru 2015 - Female suicide Amuru 2015	1.417	2.193	.633	.023	2.810	2.237	11	.047
Pair 6	Male suicide Amuru 2016 - Female suicide Amuru 2016	.583	1.165	.336	-.157	1.323	1.735	11	.111
Pair 7	Male attempted suicide Amuru 2015 - Female attempted suicide Amuru 2015	.083	2.968	.857	-1.803	1.969	.097	11	.924
Pair 8	Male attempted suicide Amuru 2016 - Female attempted suicide Amuru 2016	.083	2.275	.657	-1.362	1.529	.127	11	.901
Pair 9	Suicide Gulu 2015 - Suicide Gulu 2016	1.750	4.070	1.175	-.836	4.336	1.489	11	.165
Pair 10	Attempted suicide Gulu 2015 - Attempted suicide Gulu 2016	13.250	9.612	2.775	7.143	19.357	4.775	11	.001
Pair 11	Suicide Amuru 2015 - Suicide Amuru 2016	1.833	2.167	.626	.456	3.210	2.930	11	.014
Pair 12	Attempted suicide Amuru 2015 - Attempted suicide Amuru 2016	2.833	3.639	1.050	.521	5.145	2.697	11	.021
Pair 13	Suicide Gulu 2015 - Suicide Amuru 2015	2.917	3.397	.981	.758	5.075	2.975	11	.013
Pair 14	Suicide Gulu 2016 - Suicide Amuru 2016	3.000	2.985	.862	1.104	4.896	3.482	11	.005
Pair 15	Attempted suicide Gulu 2015 - Attempted suicide Amuru 2015	14.167	9.833	2.839	7.919	20.415	4.991	11	.000
Pair 16	Attempted suicide Gulu 2016 - Attempted suicide Amuru 2016	3.750	4.181	1.207	1.094	6.406	3.107	11	.010

Highlighted comparisons show a significant difference between the pairs at 5% level of significance. Note that the p-values (2-tailed sig.) in the last column are less than 0.05 and the 95% confidence intervals do not cross zero.