

TITLE: PREVENTING SUICIDE BEHAVIOR USING VILLAGE HELPERS IN POST-CONFLICT NORTHERN UGANDA

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ABSTRACT

Suicide and suicide attempts are world-wide prevalent phenomena causing unnecessary deaths and injuries. Fortunately, these deaths and injuries are preventable through supportive interventions. However, methods and interventions for prevention are diverse and not fully transferable between countries, societies or cultures. This study investigated the feasibility of implementing a protocol for use by trained Village Helpers (VHs) to prevent suicides and suicide attempts in post-conflict Northern Uganda.

We recruited and trained 54 VHs (22.2% females and 78.8 % men, age range 22-60 years, median 32 years) to identify and manage psychosocial problems, suicide communication, suicide risk and suicide attempts. The VHs recorded and compared data on all suicides and suicide attempts in 2015 and 2016 in the 54 parishes of Gulu district including reasons for the suicidal behavior against entry point prior to VHs engagement. We found a reduction of 36.8% completed suicides and of 64.9% suicidal attempts between the years of 2015 and 2016. VHs successfully identified and prevented psychosocial problems like conflicts and illnesses that would lead to suicidal behavior

at the household level. VHS were also able to adequately counsel and stabilize those who attempted suicide and prevented further attempts in doing so.

In conclusion, VHS were able to be trained and use the standardized **Village Helper Suicide Prevention Protocol** to prevent suicide and suicide attempts in post-conflict Gulu district of Northern Uganda. More research is needed to establish the effectiveness of VHS including studies of persistent problematic aspects of suicidal behavior for effective prevention programs and for generalization to other post-conflict communities.

Key terms: village helper, suicide, suicide attempts, psychosocial problems, household level

INTRODUCTION

Suicidal behavior is common all over the world. The World Health Organization (WHO, 2008) reported that a total of 20 million people attempt suicide each year and that over one million people die by suicide. In post-conflict countries, suicide risk among civilians is 36:100,000 (WHO, 2014). War difficulties and hardships tend to augment suicide and suicide attempts (Amone P'Olak, Lekhutlile, Meiser-Stedman & Ovuga, 2015).

Approaches for prevention of suicide and suicide attempts have previously been developed and tested in some Low and Middle Income Countries, LMIC, (Patel, Waiss, Chowdhary et al., 2011, Ovuga, 2005) with prevention programs being suggested (WHO, 2014). However, some successful prevention programs from developed countries are not adaptable to LMICs due to differences in poverty, insecurity safety and socio-demographic factors especially health care provision and education. This, therefore, calls for more targeted interventions in LMIC as being as being needed for prevention of suicide and suicide attempts such as those led by community health workers. Ono, Sakai, Otsuka, Uda, Oyama, et al., (2013) examined the effect of a Japanese community-based multimodal intervention program for suicide prevention in rural areas which were characterized by high suicide rates. By comparing the intervention group with a control group that did not participate in the program, during the 3.5-year program duration, they reported a 7% decrease in suicide rate in the intervention group. Intervention programs have also been tested in India where Patel, Weiss, Chowdhary, Naik, Pedneker et al. (2011) evaluated an intervention led by lay health counselors that targeted depressive and anxiety disorders. Their study showed a 36%

reduction in suicide attempts over a course of 12 months (Patel et al., 2011). In Hungary, Szekely, Thege, Mergl, Birkas, Rozsa et al. (2013) applied a European Alliance Against Depression (EAAD) tool and implemented a suicide prevention program in the city of Szolnok. They reported a decrease in suicide rates of 56%, 51% and 60% for 2005, 2006 and 2007, respectively (Szekely et al., 2013).

Post conflict situations in Africa offer additional risk factors to suicide attempts and hence an opportunity for prevention initiatives. Apart from increased chronic morbidities due to collapsed health care services, there is increased mental illness (Kinyanda, et al. 2005, 2013) and substance use disorders (Kizza, et al. 2012) as well as other socioeconomic hardships in the population. These make the situation difficult to target a single risk factor in order to prevent suicide effectively.

Mental Health Needs and Supports in post-conflict Northern Uganda

Health service delivery in Gulu District, northern Uganda, was not different from that reported in other post conflict settings in LMICs (WHO 2012). Gulu district has four hospitals each serving a population of 96,400; two Health Center (HC) IVs each serving a population of 192, 800, fourteen HC IIIs each serving 125,200 persons and 48 functional HC IIs 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 (WHO, 2012). Stock-outs of drugs and sundries at these health units were estimated at 50% (Gulu Planning Statistical Abstract, 2012). At the time of the study, there were three psychiatrists and two psychologists based at Gulu University who served the mental health unit at the Gulu Regional Referral Hospital (GRRH) . The mental health unit had 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. This study was designed to answer whether suicide in Gulu district, Northern Uganda, could be controlled or prevented in the midst of the prevailing

health delivery and psychosocial challenges by using a trained Village Helpers (VHs) with support from general primary health care providers.

METHODS

Participants and setting

The study took place in Gulu district, in northern Uganda. Gulu has a population of 436,345 people distributed in an area of 127km² (UBOS, 2014, 2016). Gulu district has 54 parishes. We recruited one Village Helper per parish, thus giving us a total of 54 study participants. The inclusion criteria were: being over 18 years of age, a resident of the respective parish of Gulu District, being available, approachable and willing to help regardless of gender or educational background.

Table 1: Demographic Characteristics of the Village Helpers

Variable	Category	Percent (or Mean)
<i>Gender</i>	Males	77.8
	Females	22.2
<i>Age(years)</i>	Mean	34.1
	Range	22-62
	Median	32
<i>Religion</i>	Catholic	58.8
	Protestant	34.1
	Moslem	0.0
	Pentecostal	7.1
<i>Education</i>	University	12.0
	Tertiary	26.4
	A level	7.2
	O level	33.6
	Primary	20.8
<i>Marital status</i>	Single	18.7
	Cohabiting	34.2
	Separated/divorced	2.4
	Widowed	4.9
	Married (monogamous)	33.3
	Married (Polygamous)	6.5
<i>Number of children</i>	Mean	3.5
	Range	0-10
	Median	3

Occupation	Community worker	13.5
	Peasant	57.9
	Skilled laborer	4.0

Description of the Village Helper Suicide Prevention Protocol

The Village Helpers were trained in the Suicide Prevention Protocol. This training included understanding distress, common mental illnesses, identifying and engaging those with psychological distress including those abusing alcohol. Lastly, the VH were trained in counseling people exhibiting suicide behavior, those experiencing relationship problems or household level problems. The prevention protocol is summarized in the Table below 2 below in columns of: component, process, indicators and outcomes

Table 2: Training Village Helpers Using the Suicide Prevention Protocol

Component	Process (What they did)	Indicators (What they observed)	Expected Outcomes
Understanding distress, recognizing and managing psychological difficulties	Self-experience of being tired of sadness, mental health symptoms, thoughts of suicide/death,	Others thought we were teaching about their own suffering, e.g. worries, anger, alcohol use, poverty, irritability.	Learned to: overcome symptoms, prioritize and break problems into manageable units, ignore other problems, tell about success to others to copy
Identifying suicide behavior	Identifying suicide talk e.g. I will go far! 'look after children'	People volunteering poisons, ropes, and	The number saved from attempting and

		telling past intentions of suicide attempts.	those resuscitated from attempts.
Practicing counseling skills	Practiced honesty, firmness, privacy and confidentiality.	Ability to convince people to accept their views and stay alive	Number of people who paid tribute after suicide attempts, or traumatic events.
Managing personal psychological challenges	Knowing how to break problems into manageable parts, sharing & consulting.	Knowing about a problem, its cause and progress is the beginning of solution.	One can manage personal happiness, resolve anger and have control over self
Sensitization to community issues	Standing and talking about self-experience with reference to mental health symptoms	Mental health symptoms affect all, good to know how to control self.	Self-referral and relatives referring kin to counseling. Efficacy news cascading in parish
Case referral	Case referred to HCII and few to GRRH	Ease of assessing health care for all ailments from parish	Observing improvement after treatment, reduction of fear of health care seeking.

Study Procedures.

Permission for the study was granted by the Lacor Hospital Research Ethics Committee (LHREC), (# 054/09/14) and from Uganda National Council of Science and Technology (UNCST), (# SS 3678). The VH individually consented for study. Voluntary Informed consent was obtained from the suicide risk participants whose data was collected. In case of completed suicides, permission to collect the data/information was obtained from the nearest closest relative. In any case where data was collected, the study was fully explained to the participants including potential risks and benefits.

Suicide risk measures

No national statistics or registers exist on suicide in Uganda. We, therefore, developed a survey for use by the village helpers, VHs, to collect data on those who died by suicide and those who attempted suicide. The VH collected data using informants on demographic variables such as name, gender, age, religion, level of education, marital status, and number of children. Other variables collected were suicidal behavior (threat, attempt or death) and circumstances leading to the suicidal behavior including the strategies the VHs applied to manage the case. We ensured the quality of data collected by visiting the site of suicide or of attempted suicide with the VHs thereby accurately filling in the required information. We also support-visited the VHs every month to help with difficult cases encountered and to ascertain the completeness of the collected data.

The training of VHs (N=54) lasted one week per site and took place in first quarter of 2015. The training was conducted at the site of Lalogi for Odek, Lakwana and Lalogi sub-counties, in the site of Koro for Koro, Ongako and Bobi sub-counties and in the site of Awach for Bungatira, Patiko, Palaro Unyama, Paicho and Awach sub-counties. The content of the training and the applied approach was quite different from that of health workers'. The health workers were trained on handling treatment, referrals and support supervision for the VHs.

In addition to the training, Information, Education and Communication (IEC) materials were produced in English, Luo (Acholi) and Kiswahili and distributed to all health workers and to the recruited VHs receiving training. Health workers from the armed forces, the police and the prison services preferred the Kiswahili version of IEC. These materials were displayed in public places where people of the communities thus could access, read, discuss and use the information. Consequently, anyone feeling in need of help upon reading the material could then turn to the help contacts displayed on the poster and call a health worker or a VH for psychological support. Mobile contacts of the Principal Investigator as well as that of the Chairman of The Research Ethics Committee (REC) were printed on the posters as well.

The training facilitators consisted of a professor in psychiatry (EO), a senior psychiatric clinical officer, himself a clinical psychologist (HO) and a community psychologist. The topics of the training included recognition of distress at household level, lectures on common mental illness (depression, anxiety and trauma), understanding conflict and ways to resolve it, assessing

individuals with suicidal behavior and stabilizing persons who had attempted suicide. Counseling, stress and anger management were included in the training program as well. Vignettes of real life cases were fabricated and introduced for group discussions. The groups would present in plenary which made the training experiential and interactive. Trainees who struggled with personal psychological problems and needed professional support of their own were encouraged to do so privately during training breaks. A counseling psychologist was engaged to provide treatment and to provide support supervision to VHs during the intervention period.

The VHs were informed by facilitators of how the task of supporting people with suicidal behavior or people in distress might affect them vicariously during intervention (Trippany, White Kress, Wilcoxon, 2004). HO provided counseling for the vicariously traumatized and referred some of them to EO for further support. People identified as suffering from serious mental health conditions during the intervention were referred through a system set up for this very purpose to the nearest Mental Health Centers or to Gulu Regional Referral Hospital (GRRH). In this study, the health workers per facility received training in managing common mental illnesses. For preparing health workers at GRRH to expect referrals and thus enabling them to expedite help, they were informed about the study. In addition, supervisory visits were initiated to support the health workers and the VHs with their own potential distress and with management of cases. In this way, lay counselors who were distressed before or during the study benefited from the ‘intention to treat’ policy (Oboke, Abio, Ocaka, Sodeman, Elklit & Ovuga, 2017).

Data analysis

We analyzed the data on suicide behavior and data on cases which the VHs collected. We compared the numbers and rates of suicide and suicide attempts in 2015 to that of 2016. The differences between the two years was expressed as a percentage of suicide or suicide attempts per population units for the years of 2015 and 2016.

RESULTS

Data were collected from 47 of the 54 (83%) parishes of Gulu district where VHs resided and operated. Seven of the 54 parishes (17%) were excluded from the analysis for the reasons of having no reliable resident VH and therefore having no credible data to provide. From the available data, a total of 111 suicides in the period 2015 and 2016 were registered giving average of 55.5 cases

per annum. Table 3 below shows the recorded completed and attempted suicides in Gulu and Amuru districts in the years 2015 and 2016. For purposes of this study, only the Gulu district data was considered.

Table 3: Number Of Completed And Attempted Suicides In Gulu And Amuru Districts in 2015 and 2016

Tabel 1 Number of suicide and suicide attempts in Gulu and Amuru districts in the years 2015-16																															
Gulu suicide								Gulu suicide attempts								Amuru suicide								Amuru suicide attempts							
Month	2015			2016			Sum	2015			2016			Sum	2015			2016			Sum	2015			2016			Sum			
	M	F	Tot	M	F	Tot		M	F	Tot	M	F	To t		M	F	To t	M	F	To t		M	F	To t	M	F	To t		M	F	To t
Jan	2	4	6	9	2	11	17	25	15	40	1	3	4	44	1	0	1	2	0	2	3	3	0	3	1	4	5	8			
Feb	2	3	5	2	0	2	7	14	8	22	4	0	4	26	4	0	4	3	0	3	7	8	1	9	3	2	5	14			
Mar	7	0	7	2	0	2	9	11	8	19	3	1	4	23	4	1	5	0	0	0	5	2	2	4	2	1	3	7			
Apr	5	1	6	2	0	2	8	13	10	23	7	2	9	32	1	2	3	2	0	2	5	4	7	11	6	2	8	19			
May	3	1	4	3	2	5	9	12	8	20	9	3	12	32	0	0	0	1	0	1	1	6	5	11	6	2	8	19			
Jun	6	0	6	6	1	7	13	13	6	19	6	5	11	30	2	1	3	0	0	0	3	0	2	2	0	0	0	2			
Jul	1	4	5	3	2	5	10	9	4	13	4	5	9	22	2	0	2	1	1	2	4	7	10	17	1	4	5	22			
Aug	4	0	4	5	2	7	11	12	9	21	9	6	15	36	6	0	6	0	1	1	7	2	3	5	1	2	3	8			
Sep	5	1	6	1	1	2	8	4	5	9	7	2	9	18	1	3	4	0	0	0	4	3	1	4	1	3	4	8			
Oct	2	3	5	0	1	1	6	14	8	22	0	1	1	23	2	1	3	0	0	0	3	2	5	7	0	0	0	7			
Nov	2	0	2	0	1	1	3	4	9	13	2	1	3	16	2	0	2	0	0	0	2	1	0	1	0	0	0	1			
Dec	11	1	12	2	0	2	14	14	10	24	2	3	5	29	0	0	0	0	0	0	0	0	1	1	0	0	0	1			
Total	50	18	68	35	12	47	115	145	100	245	54	32	86	331	25	8	33	9	2	11	44	38	37	75	21	20	41	116			

There was a cumulative 64.9% decrease in the rate of suicide attempts in Gulu in 2015 compared to 2016. Methods applied for suicide attempts in Gulu included hanging, burning in huts, drowning, drug overdose and poisoning. Except for the suicidal individuals who used the method of hanging, the majority of suicidal individuals ended up in health center emergency units. Individuals applying other measures for suicide attempt than the ones mentioned were not as readily offered voluntary treatment possibly due to a deeming of these individuals as criminals. Comparing the rates for suicide and suicide attempts following intervention, the VHS in the present

study and the resident community members registered a 64.9% decrease in suicide attempts. This was attributed to a positive community approval of the VHs' work in suicide prevention.

There was a gender difference in the numbers and methods of the completed and attempted suicides as shown in Table 4 below.

Table 4: Numbers Of Completed And Attempted Suicides In Gulu District Segregated By Gender In 2015 And 2016

Suicide Behavior	2015	2016	Total	Yearly diff	% change 2015/16
Completed Suicides					
Men	53	32	85	21	39.6
Women	15	11	26	4	26.7
Total	68	43	111	25	36.8
Attempted Suicides					
Men	145	54	199	91	62.8
Women	100	32	132	68	68.0
Total	245	86	331	159	64.8

Sixty-eight cases of suicide were recorded in 2015 while forty-three cases were recorded in 2016. This was a reduction of twenty-five cases or 36.8% in suicide rates during the intervention period. Concerning gender distribution, a 39.6% and 26.7% reduction was registered for males and females respectively. The larger reduction in male suicides than female suicides is further reflected in changes of male to female ratio. The ratio for 2015 was 3.5:1 whereas the ratio for 2016 was 2.9:1 showing that men were less suicidal towards the end of 2016 than at the beginning of the study. Additionally, these numbers confirm the current research findings of males dying more frequently from suicide than women.

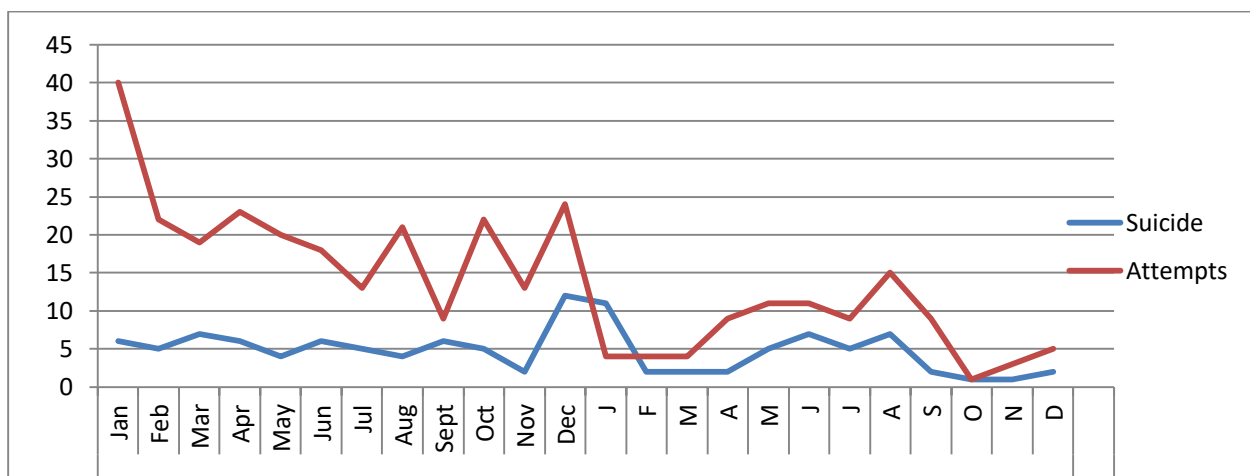
We found a large reduction of suicide behavior incidences in the entire sample during the intervention period. As mentioned above, male suicide rates remained higher than that of females. The suicide patterns for males and females showed different monthly peaking points during the intervention period. A large peak was registered towards the end of November 2015 to February 2016 and a small one around May and July 2016. Interpretations for the November/December rise were many and one of them concerns agriculture. This peak may have been affected by a seasonal

timing as crops are harvested and money distributed from local savings (*bolicup*) at this time of the year. In the time following, the distribution of money can possibly have been causing spousal conflicts concerning control of production, stock and finances at home. Around the festive season, women experiencing difficult family relationships often tend to collect money and run away with household belongings including farm products. This may cause suicidal behavior in men. Similarly, women suffer when husbands chase them away from the household and thus from income and farm products earned collectively during the year. These are examples where the VHs became useful in mitigating the disagreements that started the conflicts. In this way, VHs helped to prevent conflict escalation and suicidal behaviors from arising due to family conflicts.

Suicide attempts

From the data in Table 4 above, 245 cases of suicide attempts were registered in 2015 while only 86 cases were recorded in 2016. This translates in a total reduction of suicide attempts of 64.9%. The reduction in suicide attempts for males were 62.8% while the corresponding rate for females were 68.0%. Female to male ratio for suicide attempts was 1:1.5 in 2015 while it was 1:1.7 in 2016. In this study, male suicide attempts remained more frequent than female attempts which slightly dispute tendencies in common research findings of women attempting more suicides than men (WHO, 2014).

Figure 1: Graph Showing Trends Of Suicide Behavior 2015 And 2016



The decline in suicide incidence showed variations around August to January 2015 for males and a rise in rates from September to December 2015 for females. In 2016, male suicide attempts were

higher in May and August while the female incidences rose gradually and peaked in August and dropped in December.

Table 5: Circumstances To Suicide Behavior, Means Used And 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)
Outcome	Recovered	91(64.1)
	Died	33 (23.2)
	Recovering	17 (11.0)
	Separated	1 (0.7)

Among the reasons for suicidal behavior, conflict was the most frequently reported one among the sample responses (N=123). The category of “conflict” covered disagreement over land, property (products or animals), promiscuity and other domestic disagreements. “Anger” included instances of self-blame, annoyance after losing money to alcohol binge, impotence, consecutive death of children, discovering a spouse on antiretroviral medicine, denial of sexual intercourse and first wife opposing husband’s intentions of marrying a second wife. “Diseases” included having an HIV positive result and suffering from chronic tropical ulcers, elephantiasis, epilepsy or paralysis. “Loss” included instances of conflagration of hut and belongings, unfavorable loans, squandering school fees on alcohol, burglary, grief and loss of motorcycles. There were also instances where the suicidal individual complained about neglect and/or infection and some of these individuals reported a need for seeking vengeance.

The methods applied for suicidal acts and attempts were poisoning in 50 cases (40.8%), hanging in 27 cases (19%) and suicide communication of intent were communicated in 17 cases (12%). Others died of drug overdose while some reported having had no plans for the suicidal act and for the remaining part, the reasons were unknown. The outcomes of the suicidal behaviors were in 91 cases (64.1%) a full recovery, 17 cases (11%) recovered during treatment or were followed up with counseling and 33 of the cases (23.2%) died from the suicidal act.

DISCUSSION

The rate of death by suicide dropped by 36.8% in Gulu District in 2016 compared to 2015. A reduction of this magnitude is uncommon (WHO, 2014). According to our data, men of the Gulu and Amuru districts were thus more likely to attempt suicide compared to the women of the sample. This finding contradicts popular literature findings of females attempting suicide more frequently than men (WHO, 2014). This may be associated to the observed fact that females find a lot of new social support in groups in post-conflict Gulu for savings or for running petty businesses. On the other hand, men have experienced role changes in post-conflict Gulu. Many were left by their wives during the war and are now relegated to living solitary lives usually around alcohol as the only likely supportive social network. There was a seasonal variation of suicide rates in the present study with an increase in the rates during dry weather and periods of low food supply. Ovuga (2005) collected data on suicide ideation from the cities of Bugiri and Adjumani in the dry months of March/April 2002 and reported a lifetime rate of suicide ideation of 36.1% and an ideation during the past week of 13.1%. It is therefore not clear as to whether dry weather contributed with causing suicide in this study. This needs further exploratory study.

Also, the training of VHs' ability to recognize common mental health problems including identifying and managing sources of own personal distress had beneficial effects on their own psychological wellbeing. Increases in psychological well-being may have contributed to enhancing their motivation to help others as well (Oboke et al, 2017).

In terms of the distribution of suicide among the genders of male and female, the present study illustrated commonly found research results. For this sample, the female to male gender ratio was

1:3.5 corresponding to a gender ratio of suicides reported by Hamilton & Klimes (2015) in an illustrative review where the overall female to male ratio was 1:4.

Implications for Community Health Worker Training Programs

These study findings have implications for the training of Community Health Workers (CHWs) especially in areas of health promotion and disease prevention. Suicide is common in conflict and post-conflict communities. The findings of this study strongly point to a need to put suicide prevention initiatives in all post-conflict mental health work and rehabilitation efforts. This includes the support given to health workers in post-conflict communities. Psychological disorders whether mild or severe have symptoms which inhibit individuals to care for their own health or even safety and may promote negative coping behaviors such as smoking or alcohol use. Including a Mental Health Module in the training of CHWs with focus on experiential psychological hygiene would have transformative impact on general health of communities.

Limitation of the study

The current study had several limitations. In Gulu seven parishes had no data due to absence of VHs and over ten parishes had no Health Center IIs. This limitation resulted in data loss that could sway the results. Even in parishes where data was collected, it was likely that some cases were omitted due large parishes and inaccessibility of some villages. Additionally, some suicide attempt cases could have been hidden under emergency admission for fear of arrests thus preventing the VHs to get them registered. Suicide attempt is considered a criminal offence in Uganda. Lastly, we depended on the goodwill and voluntary service provided by the VHs. In economically poor regions such as Northern Uganda, people would wish to be paid for services rendered. We therefore doubt whether the VHs devoted all their time and energy in the intervention.

CONCLUSION

Suicide can be significantly reduced in a LMIC community through using experientially trained and psychologically motivated VHs. Many of the health-related and psychosocial problems can be mitigated using trained VHs in their communities. VHs have proven that they are a prominent tool for mobilizing resistant health-seeking and/or anxious individuals to seek out help at lower health centers and this help increase the number of people receiving care. Global mental health workers would benefit from the

implementation of VHs or similarly trained lay counselors (in developing and/or rural areas) in order to reduce the currently existing mental health treatment gap.

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