Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ _____

Ashley Kirsten Hagaman Date

Nou bezwen anpil chita (*We will need many chairs*): Perceptions of and attitudes towards suicide in rural Haiti

By

Ashley Kirsten Hagaman

Master of Public Health

Hubert Department of Global Health

_____

Kate Winskell, PhD

Committee Chair

Nou bezwen anpil chita (*We will need many chairs):* Perceptions of and attitudes towards suicide in rural Haiti

By

Ashley Kirsten Hagaman

Bachelor of Science

University of Michigan

2008

Thesis Committee Chair: Kate Winskell, PhD

An abstract of a thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of Master of Public Health in the Hubert Department of Global Health

2012

Abstract

Nou bezwen anpil chita (*We will need many chairs*): Perceptions of and attitudes towards suicide in rural Haiti

By Ashley Kirsten Hagaman

Background
Suicide is a complex, yet preventable public health problem resulting from the interaction of psychological, social, biological, and environmental factors. There are no published studies exploring suicidal behavior in the Haitian context, and few studies exploring local socio-cultural explanatory models of suicide outside of the western milieu.

Purpose
This study aimed to describe local cultural attitudes and models of suicide amongst healthcare professionals and community members to better inform future mental health and psychosocial services in rural Haiti.

Methods
Semi-structured in-depth interviews were conducted amongst 24 participants to determine norms, perceived causal pathways, and attitudes towards suicidal behavior. Participants were selected through purposive sampling of individuals who either worked as bio-medical health professionals within the community (healthcare providers) or were lay community members. Qualitative data analysis, based in grounded theory, addressed inductive and deductive themes including suicide commonality, veracity of suicidal ideation claims, religious constructs related to suicide, suicide narratives, and perceived causal factors and resources for suicide.

Results
Compared to community members, healthcare professionals were less likely to consider completed suicide a “common” and important issue. Completed suicide was commonly ascribed to a “sent spirit” from a Vodou priest. According to community respondents, completed suicides among women exclusively involved pesticide poisoning, while men chose sharp objects or hanging as their lethal method. Many suicide narratives identified common causes as strained love relationships, public shame, and extreme poverty. Respondents’ accounts suggest that church-going and religious prayer is an important protective factor as well as a potential resource and target for future prevention programs.

Conclusion
Suicide appears to have different meanings in the clinical and lay context and this discrepancy requires further attention. There is an urgent need for additional research if the burden of suicide-related morbidity and mortality is to be appropriately addressed.

Nou bezwen anpil chita (*We will need many chairs*): Perceptions of and attitudes towards suicide in rural Haiti

By

Ashley Kirsten Hagaman

Bachelor of Science

University of Michigan

2008

Thesis Committee Chair: Kate Winskell, PhD

A thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of Master of Public Health in the Hubert Department of Global Health

2012

Acknowledgements

I would like to extend deep gratitude to the teammates I worked alongside for the duration of this project. To Brad Wagenaar, your constant energy and humor made every day, despite challenges and barriers, full of laughter. I would like to thank Brandon Kohrt for his inspiring mentorship and creative insight. The contributions of research assistants, Wilfrid Jean, Alexis Ronel, and Adner Louis were invaluable and critical to the project's success. Additionally, I would like to thank all my family and friends that endured my endless story-telling, struggles, and lessons learned. Thank you for your support, thoughtful critiques, and love.

ABSTRACT

Nou bezwen anpil chita (*We will need many chairs*): Perceptions of and attitudes towards suicide in rural Haiti

By Ashley Kirsten Hagaman

Background
Suicide is a complex, yet preventable public health problem resulting from the interaction of psychological, social, biological, and environmental factors. There are no published studies exploring suicidal behavior in the Haitian context, and few studies exploring local socio-cultural explanatory models of suicide outside of the western milieu.

Purpose
This study aimed to describe local cultural attitudes and models of suicide amongst healthcare professionals and community members to better inform future mental health and psychosocial services in rural Haiti.

Methods
Semi-structured in-depth interviews were conducted amongst 24 participants to determine norms, perceived causal pathways, and attitudes towards suicidal behavior. Participants were selected through purposive sampling of individuals who either worked as bio-medical health professionals within the community (healthcare providers) or were lay community members. Qualitative data analysis, based in grounded theory, addressed inductive and deductive themes including suicide commonality, veracity of suicidal ideation claims, religious constructs related to suicide, suicide narratives, and perceived causal factors and resources for suicide.

Results
Compared to community members, healthcare professionals were less likely to consider completed suicide a “common” and important issue. Completed suicide was commonly ascribed to a “sent spirit” from a Vodou Priest. According to community respondents, completed suicides among women exclusively involved pesticide poisoning, while men chose sharp objects or hanging as their lethal method. Many suicide narratives identified common causes as strained love relationships, public shame, and extreme poverty. Respondents’ accounts suggest that church-going and religious prayer is an important protective factor as well as a potential resource and target for future prevention programs.

Conclusion
Suicide appears to have different meanings in the clinical and lay context and this discrepancy requires further attention. There is an urgent need for additional research if the burden of suicide-related morbidity and mortality is to be appropriately addressed.

Table of Contents

Introduction

Introduction and Rationale

Recent declarations have stated that 'there is no health without mental health' [1]. The Movement for Global Mental Health has demanded increased attention, investment, and research to address the growing burden of neuropsychiatric disorders [2]. Premature death from suicide is a leading cause of death worldwide. Self inflicted injuries are projected to be the 12th leading cause of death worldwide by 2030 [3]. Suicide claims the lives of over one million people annually [4], with over 85% of these deaths occurring within low and middle income countries (LMICs). In some countries, suicide rates have increased by approximately 60% over the past 45 years [5]. Moreover, completed suicides are only a fraction of the burden. 10-20 million individuals attempt suicide each year and 50-120 million are affected by suicide globally [6]. Despite its substantial burden, suicide remains under-prioritized among researchers and stakeholders compared to other mental health research priorities in LMICs [7, 8].

Problem Statement

Suicide is a complex, yet preventable public health problem resulting from the interaction of culture-specific psychological, social, biological, and environmental factors. Suicide claims the lives of over one million people annually, with over 85% of these deaths occurring within LMICs. Mental health remains under-prioritized amongst researchers and, when addressed, is too often siphoned from primary care. The siloing of health infrastructure perpetuates notions that mental health is distinct from other forms of illness. Ultimately this inhibits the possibility of interventions improving health

and, concurrently, prompting poverty reduction and increasing economic productivity and self efficacy. There are no published studies examining suicidal behavior in the Haitian context, and few studies exploring local socio-cultural explanatory models outside of the western milieu. It is critical to understand local attitudes towards and perceptions of suicide in order to establish culturally salient and effective prevention and education programs to address suicide.

Purpose Statement

This paper serves two objectives: (1) to document the similarities and differences between Haitian healthcare professionals' and community members' perceptions regarding the etiology, presentation, and attitudes towards suicide, and (2) to develop a theoretical framework of suicide in the Haitian context grounded in the respondents' explanations, perceptions, and anecdotes.

Research Questions

1. What is the perceived prevalence of suicide within Haiti's Central Plateau from the perspective of community members and healthcare professionals?
2. What are the similarities and differences between Haitian healthcare professionals' and community members' perceptions regarding the etiology, presentation, and attitudes towards suicide.

Significance Statement

This study will inform our understanding of the socio-cultural complexities of suicide and mental health issues in rural Haiti. The following investigation has the

potential to influence the adoption of a culturally-competent approach to the design, targeting, and implementation of effective and sustainable mental health services in Haiti.

List of Key Terms

GBD (global burden of disease) – a systematic scientific effort to quantify the comparative magnitude of health loss due to diseases, injuries and risk factors by age, sex, and geographies for specific points in time.

Suicidal behavior – any deliberate self-directed action that has a potentially life-threatening consequence for that individual.

Suicide – death caused by self-directed injurious behavior with any intent to die as a result of the behavior.

Suicide attempt – a non-fatal self-directed potentially injurious behavior with any intent to die as a result of the behavior. A suicide attempt may or may not result in injury.

Suicidal ideation – thinking about, considering, or planning for suicide.

LMIC (Low and Middle in Countries) – Economies are divided according to their 2010 GNI per capita, calculated using the World Bank Atlas method. The groups are: low income, $1,005 or less; lower middle income, $1,006 - $3,975; upper middle income, $3,976 - $12,275; and high income, $12,276 or more. LMICs exclude high income countries.

Vodou –a West African religion practiced in Haiti. "Vodou", stemming from the word 'Fon', means spirit. As slaves were forced into Haiti their traditional religious practices were forbidden. Vodou, as practiced in the Haitian context, has resulted from a hybridization of recognized traditional Voudoo spirits and ancestors and Catholicism. Voudoo extends into many other dimensions of life including health and well-being.

Houngan/ Mambo – An Houngan is a male Voudoo Priest, while a female Voudoo Priest is named a 'Mambo'. Houngans and Mambos are chosen by the dead ancestors and serve as mediums to deities and ancestral spirits. Voudoo Priests can protect individuals from spells and can also perform rituals to send spells and spirits to others (these may inflict harm.)

DALYS – Disability Adjusted Life Years - the sum of time lost due to premature mortality (YLLs) and time lived with disease or impairment (YLDs)

Review of the Literature

Introduction

The literature reviewed here will provide both context and justification for the proposed study. The literature will cover: the landscape of global mental health; epidemiology of suicide in low and middle income settings; suicide theory; culture and suicide; the Haitian historical, political, and cultural context; and existing intervention frameworks addressing suicide in resource poor settings.

Global Mental Health

Although still vastly underrepresented in the global health literature, global mental health research has been the subject of renewed interest and investment, catalyzing a growing body of evidence of the severity and importance of mental illness and its associated burdens around the world. Depression is predicted to become the second leading cause of DALYs lost in the world by 2030, following only HIV [3]. In (LMICs), depression will represent 4.7% of total DALYs lost. However, despite rallying cries and new precedents [1, 2, 9], few studies have explored local perceptions of mental illness or culture-specific explanatory models. Additionally, in-depth explorations of mental health on the local level have neglected to include suicide. Over the past two decades, the developed world has gained psychiatrists, while the developing world, already severely lacking a mental health workforce, has lost them [10]. A recent review estimated a global shortage of 1.18 million mental health workers, contributing to over 75% of patients remaining untreated in LMICs [10, 11]. Neuropsychiatric disorders comprise a substantial share of the global burden of disease, but on average, comprise

only 4% of overall health care budgets [1]. More attention and efforts are desperately needed in order to address the global burden of mental health-related issues.

Epidemiology of Suicide

Suicide is a complex, yet preventable public health problem resulting from the interaction of psychological, social, biological, and environmental factors [6]. Suicide claims the lives of over one million people annually [4], with over 85% of these deaths occurring within LMICs. Premature death from suicide is a leading cause of death worldwide; self-inflicted injuries are projected to rise from the 14th leading cause of death currently to 12th in 2030 [3]. However, completed suicides are only a fraction of the burden. 10-20 million individuals attempt suicide each year and 50-120 million are affected by suicide globally [6]. Despite this large burden, suicide is still under-prioritized among researchers and stakeholders compared to other mental health research priorities in LMICs [7, 8].

A plethora of literature exploring risk factors for suicide in developed countries exists, however, little is available specifically for LMICs. Globally, common risk factors include being female, younger or in old age, less educated, unmarried, under chronic stress, a substance abuser, and having previously attempted suicide [12-17]. Living in a rural area is also of particular importance in poorer countries [18-20]. Suicide rates in island countries such as Cuba, Japan, Mauritius and Sri Lanka are some of the highest in the world [21]. Several studies suggest that risk factors may differ significantly in developed versus developing countries [12-14, 22]. In a World Health Organization (WHO) multi-country mental health survey, the strongest diagnostic risk factor in high

income countries were mood disorders, but in LMICs, impulsive control disorders predicted suicide over any other diagnosis [13, 23]. Another study's findings suggest that being female, living in a rural area, and holding religious beliefs that sanction suicide may be of more relevance to suicide risk in developing countries than they are in high-income countries. Although being single and having a history of mental illness are risk factors for suicide in developed countries, they do not appear to be associated with increased risk of suicide in LMICs [14, 23]. The most common method of self-injury in LMICs is poison ingestion, most often with pesticides [24-26] followed by hanging and self-immolation [12, 17, 27, 28]. Access to pesticides greatly increases the risk of suicide [24] and should be considered in prevention measures. Finally, prior suicidal behaviors among an individual's social groups may play an important role [29].

Identified causes of suicide vary depending on the socio-cultural factors present within a particular community. In the Philippines, family and relationship problems are the biggest precipitants of suicide [30]. Spousal conflict and intimate partner violence remain major causes for female suicide in China and Nepal [31].

These differential findings have clear implications for suicide prevention and suggest that effective efforts in high-income countries may not be salient or useful in developing countries. Preventative programs will need to be tailored to the risk factor profiles of each country, as socio-cultural characteristics certainly mediate the risk of suicidal behavior.

Suicide Theory

Emile Durkheim remains the leading and most revered social theorist on suicide. Durkheim explained suicide as a result of social disintegration, brought on by the rise of modernity (specifically the city). He argued that rural communities were less prone to suicide and that women in particular, due to their essential role in maintaining family structure, were considered to be physiologically immune to suicide [32, 33]. Durkheim classified suicide in varying categories (egoistic, anomic, altruistic, and fatalistic) to distinguish difference in etiology. Egoistic and anomic were thought to be results of social disintegration. These classes were of particular interest to Durkheim as he theorized that they occurred most often. Altruistic and egoistic suicides (caused by social integration), however, were neglected by Durkheim as he considered them to be of little importance to 'modern society' [34]. Altruistic suicide is committed for the benefit of others [35]. Durkheim argued that altruistic suicide is very rare in modern, 'westernized', society. Documentation of altruistic suicide has been described in India, where self-immolation by women occurred after the death of her husband in battle [36]. Fatalistic suicide results from integration into oppressive social structures causing an inability to realize one's full potential and instilling feelings of hopelessness. It was later argued that fatalistic social integration has become a more important determinant in suicide than the previously described altruistic paradigm [37]. Over time, studies have generally supported Durkheim's assumptions that social disintegration causes more morbidity and mortality than integration [38-40]. In contrast, recent articles are building arguments against Durkheim's previously universally accepted theories and constructing

a novel and radical case that social integration is the primary root of suicide mortality [34, 41]. Kushner argues that Durkheim misrepresented his data, building a case that suicide in the military, a highly socially integrated community, must be a result of fatalism [34, 41]. This conception of suicide has been useful in explaining suicide among rural women in China, among Native Americans, and other groups that are highly socially integrated [42-45].

Culture and Suicide

A study exploring the effect of culture on suicide amongst women in Ghana found that motives for self-harm included accusation of stealing (a salient motive to the Haitian context), failed love relationships, abusive marriage, death of a child, and poverty [27]. As developing countries grow and provide more opportunities for their citizens in urban areas, those remaining in rural settings are significantly more likely to commit suicide. This may be due to economic deprivation, lack of social support, isolation, and easy access to lethal means like pesticides [6, 46, 47]. Other cultural factors have been shown to play a role in how suicidal behavior manifests in a particular region. Religious beliefs, practices, and norms influence patterns of suicide within societies, most often serving as a protective factor [48]. Faiths that forbid suicide and are Mosaic religions (Judaism, Christianity, Islam) may exert a more protective effect than Eastern religions [49-51]. Suicide is illegal in Pakistan [52], India, Malaysia, and Ghana [53] and this has pertinent implications for the identification, reporting and prevention activities that take place. Cultural attitudes towards women, their role in marriage, and existing oppression within contemporary society may explain higher

female suicides and attempted suicides compared to males in China and Nepal. Suicide is generally perceived negatively in African countries [54-56] and religion was not found to be a significant determinant of suicide in Ghana [57]. The unique combination of religious practices, laws, environments, occupations, and gender roles determines how suicide patterns manifest in that particular context. All of these factors must be considered when defining predictors and preventative efforts relating to suicide, particularly in a non-western context as risk factors and explanatory models may drastically differ.

Suicide Interventions and Existing Prevention Efforts in LMICS

Patel and colleagues have spearheaded the development and testing of different interventions to reduce the morbidity related to mental illness in low and middle income countries. A collaborative stepped care intervention in Goa, India, integrated case management and psychosocial interventions into regular health care. The intervention was managed by a lay health counselor, psychiatrist, and primary care physician. This task-shifting model proved effective at reducing common mental disorders [58, 59], including schizophrenia [60], and serves as a great precedent for possible progress in global mental health. Other models have also proven effective. One study found educational institution-based peer education and teacher training, community peer education and health information sessions reduced morbidity due to violence and mental health in youth in India. These are hypothesized to offer an effective alternative to interventions based within the health care system [61]. Most studies concur that a significant relationship exists between poverty and mental illness,

and in most instances, educational attainment as well [46]. Effective suicide interventions included educating physicians and restricting access to lethal means [62]. Public education and screening programs were also found to be effective in higher income countries, but not necessarily in LMICs [63]. Patient education about suicide and diligent follow-up proved to reduce additional suicides in five LMICs [64]. Much more research is needed, regardless of country income bracket, to better determine the effective components of suicide prevention efforts in order to create cost-effective interventions [62]. In 2000, WHO launched the SUPRE-MISS trial (SUicide-PREvention Multisite Intervention Study on Suicidal behaviors) that sought to increase knowledge about suicide and assess the effectiveness of brief educational intervention and periodic follow-up contacts (BIC), adopted from alcohol interventions, for suicide attempters. The trial took place in many different settings, including several LMICs. The study did not find significant improvements in those enrolled in BIC and thus could not confirm the program's effectiveness in reducing suicide attempts in high-risk individuals [63]. Intervention strategies and prevention programs must address the burden of mental illness through education, economic empowerment, and relevant religious communities. Additionally, programs must be incorporated into primary care in order for high quality complimentary efforts to enhance overall health.

Haitian History and Culture

History

Haiti was the first Caribbean country to successfully overthrow its colonizers in 1804 and to win its independence. Despite Haiti's triumph as the first independent Black country in the New World, it remains the poorest in the western hemisphere [65]. The

twentieth century brought a confluence of external exploitation by foreign governments and investors and Haiti's own political instability, corruption, and oppression creating an environment that continues to perpetuate human suffering and under-development.

Demographics

Today, Haiti is home to over 9 million people of which nearly 60% live in rural areas [66, 67]. Approximately 50% of the population is 20 years or younger. Nearly every Haitian speaks Haitian Creole as their first language and about 20% speak French. Literacy is low, less than 30% of the population has education beyond primary school, and only 1% ever reaches university. Less than 10% of the schools are funded and supported by the Haitian government, fragmenting education standardization and limiting access to high quality education free of cost.

Income inequality in Haiti is ranked among the worst in world. The Gini coefficient is 60%, [68] the highest in the western hemisphere. Most of the country lives below the poverty line (77%) and almost half live in extreme poverty [68]. Over half of the population (52%) lives in rural areas (WHO Country Profile, 2009, Global Health Observatory). Rural residents often live with no indoor plumbing, have little access to social services, and largely depend on agricultural production for survival [69]. Social groups in Haiti are affected by a profound class hierarchy based on educational attainment, language, familial background and culture [70]. Neocolonialism and legacies of slavery restrict access to political, economic and social power and perpetuate severe inequity [71].

Religion and Culture

The family in Haiti is elastic and extended and usually includes a large network of relatives, neighbors, and friends [72]. Common-law unions (called a "plasaj") are a very common type of cohabitation. A plasaj allows a man to have several common-law wives and is required to provide economic support and social stability for each family. Legal marriage, often through the Christian church, is considered the most prestigious form of union [73]. Women are responsible for buying and preparing food and caring for children. Men are often responsible for agricultural work, providing means for their family, and securing and maintaining the home [74]. Women are often marginalized, especially single mothers, who are commonly forced to migrate to urban areas [75].

Religion is a critical component of political, moral, physical and social life in Haiti [76]. There is dense religious diversity in Haitian communities where individuals practice several religions including Roman Catholicism, Vodou, and various Protestant traditions. Each faith has evolved through religious hybridization over time. They share key symbolic elements and an understanding of each perspective is needed in order for one to make sense of their interplay [77, 78]. Extensive documentation of Vodou tradition and practices exists in the literature. The majority of Haitians, particularly poorer individuals, practice Vodou and many individuals dually identify both as a Christian and a Vodou follower [79]. "Vodou", stemming from the word 'Fon', means spirit. As slaves were forced into Haiti their traditional religious practices were forbidden. Due to colonial oppression and forced conversion to Roman Catholicism, slaves identified their African deities with the saints of the Roman Catholic Church thus allowing them to continue to practice their traditional religion while abiding by the Black Codes of 1685.

Within Vodou, African deities are called lwa-s and symbolize the protective spirits of ancestors, family members, and biblical figures [70]. Lwa-s can protect against curses and sent spirits, but can also punish an individual if they are not properly satisfied by the family they serve to protect. Unhappy Lwa-s may cause misfortune, disease, and mental illness [70]. Vodou constructs itself as a way of life and weaves into the health system. One can access the spirits and healing practices of Vodou through a Vodou priest (Houngan) or Vodou priestess (Mambo) [80]. Vodou may contribute to a common sense of mistrust of others in Haiti because spirits are often used to send harm to one's enemies. However, Vodou may also serve as an asset to those without access to formal health care due to its accessibility and the community's confidence in its effectiveness [70, 80].

Cultural constructions and conceptualizations of death in Haiti may have implications for better understanding of suicide in the Haitian context and incorporating effective and salient prevention strategies. Deceased family members remain important to existing familial relatives. Funerals and related rituals are elaborate, costly, and extended over a lengthy amount of time. The dead are still considered a part of the family and are able to communicate to their living family through dreams and other traditional rituals [74]. The dead must be suitably served by their living, particularly through proper burial ceremonies. Without these ceremonies, the fate of the dead and their spirits are unknown and may cause strife for their families [81].

Constructions of Health in Haiti

Explanatory models of illness in Haiti result from various cultural beliefs and social circumstances. Often, individuals seek health care from several sources ranging

from Houngans, leaf doctors, western trained healthcare professionals and religious communities. Different illnesses may fit into several different categories of disease. Roughly, these include maladi Bondyè (God's disease or natural sicknesses), maladi peyi (short-term sicknesses), maladi moun fè mal (magic spells sent because of human greed), and those of supernatural origin, maladi bon lwa ('disease of God') and maladi Satan (Satan's or "sent" sicknesses) [82, 83]. Sterlin reports that Haitians perceive the individual through a "cosmocentric" perspective. An individual is one component amongst the spirits, ancestors, and other forces that make up the universe. Good health is realized when all of these components are in harmony [83]. Mental health problems may be perceived as a result of a spell, curse (or sent spirit), or a failure to please spirits. This perspective relieves self-blame and rather attributes poor health and mental illness to something beyond the individual's immediate control [70, 82]. However, despite mechanisms for blame displacement, shame associated with severe mental illness is still inflicted on the family and may causes debilitating stigma [80]. This may result in refusal to recognize the illness and access treatment to hide associated stigma and avoid public shame. Psychiatric symptoms may be confused with religious and spiritual practices and care must be taken to distinguish these differences in order to reach the appropriate diagnosis [84]. In northern Haiti, the presentation of some mental health symptoms has recently been published. Depression and anxiety may be characterized as "deep suffering in the heart" and "thinking too much" [85]. Although literature relating to Haitian mental health is growing, there remains a profound gap in the literature documenting culturally salient explanations for mental illness in Haiti and

no reliable literature exists on prevalence rates for particular mental illnesses [82]. The previous literature cited does not account for emic idioms of distress and, because instruments are rarely validated, misses a great portion of the mental health construct being measured. This may result in an imposition of western annotations of psychopathology on a population that may have different constructions and values related to emotional distress and mental illness.

Mental Health Infrastructure in Haiti

The health care system in Haiti is composed of four components: (1) the Ministry of Public Health and Population (MSPP), (2) Non-governmental and religious organizations comprising the private non-profit sector, (3) mixed non-profit (the Haitian government pays for staff to be placed within non-profit organizations to deliver care), and (4) the private for profit sector [82]. According to PAHO in 2003, the public sector comprises 36% of health services in-country while the private sector provides another 30%, leaving more than a third of Haiti's health infrastructure in the hands of NGOs (find the PAHO report). The same report found 10 psychiatrists and 9 psychiatric nurses working in the public sector in Haiti. Zanotti argues that the exorbitant number of NGOs in Haiti exacerbates the fragility of Haitian state institutions and stifles the country's ability to cultivate solutions and development for its people. Instead, the short-term perspective of NGOs perpetuates a vicious cycle of poverty and dependence on foreign powers [86]. However, as Haiti begins to invest in new teaching hospitals we expect the number of mental healthcare providers to rise [87]. There are two psychiatric hospitals in Port-au-Prince, but the resources and services they offer are severely limited [87]. No health care facilities provide linkages in care and most operate in disease-based silos

[82]. As mental health services have been severely underfunded and under-prioritized for decades, Haitians seek care from traditional healers (as mentioned above). In Haiti, it will be essential to involve educational, labor, and agricultural sectors as well as various partner organizations, traditional healers, and religious communities if we are to effectively tackle the burden of mental illness and suicide. Although efforts are underway, Haiti currently has no mental health policy or formal laws. The most recent mental health report from Haiti reveals the deplorable state of mental health infrastructure, human resources, legislation, and care availability and calls for its immediate prioritization within the health sector. The authors suggest a bio-psycho-social approach that targets the general population with mental health education programs followed by specific targeted interventions for vulnerable populations, and finally specialized interventions for those suffering from rare, but severe, mental illnesses[87].

Suicide in Haiti

A Haitian scholar, Emerson Douyon, theorized in 1969 that a pervasive fatalistic life philosophy and close community structures reduce the potential for suicide [88]. He also stated that Vodou serves as an outlet for deviant behavior may explain the rarity of suicide and homicide in Haiti [89]. The WHO does not report any suicide figure for Haiti, and currently there are no published studies of suicide in the Haitian context. A recent 2011 UN report collected (via UN Peace Keeping forces) all deaths by homicide in Haiti, including reported suicide. They estimated the 2011 homicide rate in Haiti as 6.9 per 100,000 [90].The report cites important limitations and data gaps that must be considered when interpreting their data. There is no way to distinguish suicides from

the overall homicide rate due to non-specific reporting and limited data collection. This rate is much lower than its Dominican Republic counterpart, estimated at 24.9 per 100,000. This report collected data from reported law enforcement or criminal justice authorities in country and the authors acknowledge important limitations regarding the validity, accuracy, comparability, and coverage. The WHO's most recent reports on suicide in the Dominican Republic find the overall suicide rate to be 2.3 per 100,000, and higher among males than females (3.9 vs. 0.7) [91], much lower than the rate cited in the recent 2011 UN report. There is extensive literature that suicide under-reporting [30, 53, 92] and misclassification is common, suggesting that these published rates may be an underestimate. Our research team was the first to report suicidal ideation in the Central Plateau using locally adapted instruments. We found that 6.13% of our sample expressed current suicidal ideation. Associated risk factors included depression, lack of care if sick, alcohol use, and ever visiting a Vodou priest [93]. Some suicide studies conducted in the Caribbean provide data that may be relevant to the Haitian context. Suicide rates in ethnic minorities in the UK are much higher among young African Caribbeans compared to other minorities [15, 28]. Taylor et al. found religious involvement to be protective in the United States. However, the team also found embedded contradictions where believing that prayer is important in stressful situations was a risk factor for suicidal behavior. Very high suicide rates have been found in Trinidad [94-96]. A study in the late 1980's, documented suicides amongst non-white individuals in Dade County, Florida. They found suicide rates to be variable, but lower among Haitian migrants compared to black Hispanics and American Indians [97]. Other

contextual circumstance of relevance to Haiti may be the effects of devastating natural disaster and their association with suicide rates. Previous literature in developed regions found that suicide rates decreased after large natural disasters [98-100]. In contrast to this evidence, researchers did find increased suicidal ideation rates after the Hurricane Katrina in New Orleans [101].

Manuscript

Nou bezwen anpil chita (*We will need many chairs):* Perceptions of and attitudes towards suicide in rural Haiti

Abstract

Background
Suicide is a complex, yet preventable public health problem resulting from the interaction of psychological, social, biological, and environmental factors. There are no published studies exploring suicidal behavior in the Haitian context, and few studies exploring local socio-cultural explanatory models of suicide outside of the western milieu.

Purpose
This study aimed to describe local cultural attitudes and models of suicide amongst healthcare professionals and community members to better inform future mental health and psychosocial services in rural Haiti.

Methods
Semi-structured in-depth interviews were conducted amongst 24 participants to determine norms, perceived causal pathways, and attitudes towards suicidal behavior. Participants were selected through purposive sampling of individuals who either worked as bio-medical health professionals within the community (healthcare providers) or were lay community members. Qualitative data analysis, based in grounded theory, addressed inductive and deductive themes including suicide commonality, veracity of suicidal ideation claims, religious constructs related to suicide, suicide narratives, and perceived causal factors and resources for suicide.

Results
Compared to community members, healthcare professionals were less likely to consider completed suicide a “common” and important issue. Completed suicide was commonly ascribed to a “sent spirit” from a Vodou Priest. According to community respondents, completed suicides among women exclusively involved pesticide poisoning, while men chose sharp objects or hanging as their lethal method. Many suicide narratives identified common causes as strained love relationships, public shame, and extreme poverty. Respondents’ accounts suggest that church-going and religious prayer is an important protective factor as well as a potential resource and target for future prevention programs.

Conclusion
Suicide appears to have different meanings in the clinical and lay context and this discrepancy requires further attention. There is an urgent need for additional research if the burden of suicide-related morbidity and mortality is to be appropriately addressed.

Introduction

Suicide in Low and Middle Income Settings

Suicide claims the lives of over one million people annually [4], with over 85% of these deaths occurring within low and middle income countries (LMICs). Premature death from suicide is currently the 14th leading cause of mortality worldwide and is projected to rise to 12th by 2030 [3]. In some countries, suicide rates have increased by as much as 60% over the past 45 years [5]. Moreover, completed suicides are only a fraction of the burden. Globally, 10-20 million individuals attempt suicide each year and 50-120 million are affected by suicide [6]. Despite its substantial burden, suicide remains under-prioritized among researchers and stakeholders compared to other mental health research issues in LMICs [7, 8].

Most data about risk factors for suicide are based on Western samples and therefore, their relevance to low income settings is unclear. Several studies suggest that risk factors may differ significantly in developed versus developing countries [12-14, 22]. Research conducted in Asian LMIC countries, however, has found common risk factors in developing-world settings to include being young or in old age, less educated, unmarried, under chronic stress, a substance abuser, living in rural areas, and having previously attempted suicide [12-20]. The effect of gender varies across settings. Typically, males experience higher rates, however in India, Nepal, and China, female suicides are equal to or higher in number than male [102-104]. Island countries such as Cuba, Japan, Mauritius and Sri Lanka have some of the highest suicide rates in the world [21].

In contrast to wealthier countries, a history of neuropsychiatric disorders and marital status seem to be less associated with suicide in LMICs [14]. Instead, a history of impulsive control disorders, being female, living in a rural area, and holding religious beliefs that sanction suicide may be of more relevance to suicide risk in developing countries than their developed-world counterparts [13, 23]. The most common method of self-injury in LMICs is poison

ingestion, frequently using pesticides [24-26], followed by hanging and self-immolation [12, 17, 27, 28]. As suicide presents differently in disparate settings, individuals' attitudes towards suicide provide essential information for the development of targeted interventions [5, 105, 106]. Despite the existing literature and growing urgency to address mortality and morbidity due to suicide, several developing countries are still unable to report suicidal activity due to its low priority and the country's limited infrastructural capacity.

Suicide Theory

Existing suicide theory is derived largely from Emile Durkheim. He argued that rural communities were less prone to suicide and that women in particular, due to their essential role in maintaining family structure, were considered to be physiologically immune to suicide [32, 33]. However, this well-accepted assumption that social disintegration causes greater suicide morbidity and mortality [38-40] may not hold in disparate socio-cultural contexts where religion, culture, and unique historical factors may contribute differently to suicidal trends. Burgeoning literature argues that social integration, in contexts where a fatalistic worldview is normative, is the primary cause of suicide mortality [34, 41] and we must challenge assumptions that social capital is a definitive protective factor against suicide. This new conception of suicide has been used to explain suicide among rural women in China, Native Americans, and other groups that are highly socially integrated [42-45].

Socio-cultural context relating to suicide in Haiti

Haiti, the poorest country in the western hemisphere, has sustained remarkable oppression and structural violence, contributing to its high burden of disease and premature mortality. Unprecedented attention was brought to Haiti in recent years following devastating floods and the 2010 earthquake and cholera epidemic. There is evidence to believe that depression and violence may exacerbate suicidal behaviors [107-110], however few explorations

have paired quantitative explorations with qualitative methods to gain a deeper understanding of presentations of self-inflicted violence and mental illness within the local context.

Religion is a critical component of political, moral, physical, and social life in Haiti [76]. Extensive documentation of Vodou tradition and practices exists in the literature. The majority of Haitians, particularly poorer individuals, practice Vodou[79]. Existing literature in other LMICs suggests that as countries grow and provide more opportunities for their citizens in urban areas, those remaining in rural settings are significantly more likely to commit suicide. This may be due to economic deprivation, lack of social support, isolation, and easy access to lethal means like pesticides [6, 46, 47]. Other cultural factors have been shown to play a role in how suicidal behavior manifests in a particular region. Religious beliefs, practices, and norms influence patterns of suicide within societies, most often acting as a protective factor [48]. Specific cultural conceptualizations of death in Haiti, rooted in Vodou tradition and practice, may have implications for the understanding of suicide. Deceased family members remain important to living relatives and are believed to be able to communicate to their living family through dreams and other rituals [74]. A Haitian scholar, Emerson Douyon, theorized in 1969 that a pervasive fatalistic life philosophy and close community structures reduce the potential for suicide [88]. He also stated that Vodou serves as an outlet for deviant behavior so that suicide and homicide are rare in Haiti [89]. Our research team was the first to report suicidal ideation in the Central Plateau using locally-adapted instruments[93, 111] and found current suicidal ideation to be 6.2% and associated with depression symptomatology, lack of care if sick, alcohol use, and ever having visited a Vodou priest [93].

No suicide figures for Haiti are reported by the WHO or any other surveillance body. Currently there are no published studies of suicide in the Haitian context, and few studies have explored local socio-cultural explanatory models outside western milieus. To establish culturally

salient and effective prevention / education programs addressing suicide in LMICs, it is essential to understand local attitudes towards, and perceptions of, suicide. Literature in the last century briefly explored the importance of the communication of suicidal intent and potential linkages to suicidal behavior [112, 113], however, only one recent publication was conducted in a low income setting [114]. The present study is the first account of local attitudes and perceptions towards suicide in rural Haiti. Given the dearth of literature on suicide in LMIC settings, our findings have important implications for future research and prioritization of mental health infrastructure development both in local Haitian context and in other developing-world settings.

Methods

Concurrent with the present study, a cross-sectional epidemiologic household survey was exploring the prevalence and associated factors of depression, anxiety, and function impairment in the same zone using locally-adapted instruments [93, 111]. Several suicidal endorsements were documented through the household survey and were referred to local psycho-social staff for support. The research team encountered differing perspectives amongst healthcare providers and community members on the veracity of suicidal ideation claims during data collection. The team sought to better understand these attitudes towards suicide, perceptions of its commonality, and socio-cultural constructions of its etiology. We conducted a qualitative examination of attitudes and perceptions of suicidal behavior in rural Haiti. The purpose of the study was to describe local cultural models of suicide amongst healthcare providers and community members to better inform future mental health research and psychosocial services in rural Haiti.

Study Setting

The study was conducted in the commune of Lascahobas in the Central Plateau of Haiti. This setting was chosen to build upon previous anthropological and ethnographic work

conducted by the study's team members. Subjects lived in the Commune of Lascahobas in Haiti's Central Plateau and the research team conducted interviews over a four week period in May-June, 2011. Complete description of the study setting and post-earthquake context has been described elsewhere [93, 111].

Study Population Sample

Participants were selected through purposive sampling of persons who either worked as bio-medical health professionals within the community (healthcare professionals) or were lay community members. One informal focus group was conducted with local lay health educators employed part time by a local non-governmental organization. Lay health educators had various occupational backgrounds ranging from accounting to religion. These individuals were categorized as community members. Community members must have been born or lived the majority of their adult life in the Commune of Lascahobas and did not work within a health-related field. All healthcare professionals were previously trained in Port-au-Prince and relocated to the rural commune of Lascahobas and/or the surrounding area to work either for a local non-governmental organization or on government mandated year of service to the state. A total of 15 community members and 7 healthcare professionals were interviewed (Table 1). Semi-structured interviews elicited participants' perceptions of the commonality of suicidal behavior, models of suicide causation, and resources and solutions perceived to potentially alleviate suicidal thoughts and actions within the community. A total of 18 hours of semi-structured interviews with participants were undertaken.

Design

Informants chose to conduct the interview in either Haitian Creole or French. In interviews where the informant chose Haitian Creole as the preferred language, one of three trained tri-lingual (English, French, and Haitian Creole) Haitian research assistants familiar with the region served as a translator. If informants chose to speak in French, the lead authors

conducted the interview with a research assistant present. Wagenaar and Hagaman, familiar with Haitian Creole and the Haitian use of French, were present at every key informant interview and ensured that the translator properly conveyed each respondent's answers and the interview questions correctly. All research assistants were trained by the study team in the project aims and methods, techniques for providing literal (rather than summative) translation, and issues of ethics and confidentiality. The authors transcribed each interview verbatim (if conducted in French) and otherwise transcribed the interview directly from the verbal translation captured on the audio files.

The following questions were asked in all interviews in a semi-structured format to assess each informant's perceptions of suicidal ideation and behavior in their community as well as their attitudes towards suicidal individuals. A range of probes were used on an ad-hoc basis.

1. Can you tell me about yourself and your community?
2. What kind of health and social problems do you deal with at your job (*in life* if community member)?
3. Do people ever come to you with sadness or stress so bad that it affects their daily life?
4. Have you ever heard of someone who suffers so much that they have no hope for life and ponder killing themselves?
5. Through our household survey in the zones surrounding Casse, we have found many individuals who have thought about and attempted suicide. What do you think about this?
6. Some health professionals have told us that suicide doesn't happen, that people don't kill themselves, and that poverty is not a reason to kill yourself. What do you think about this?
7. What do you think the priorities of the Ministry of Health should be? Where do more resources need to be placed?

In addition to the interviews described above, individuals endorsing active suicidal ideation on the concurrent household survey were followed up by a licensed American clinical social worker. All sessions were transcribed as field notes at the time of the interview. Following the interviews all clients were confirmed as endorsing current suicidal ideation and the veracity

of their initial survey endorsements were evaluated. Additionally, routine daily debriefing with research assistants provided detailed contextual information on each suicidal endorsement. These sessions and resulting information were recorded as field notes by the research team and are shared in the following analysis as complementary 'suicide narratives'.

Data Analysis

This paper serves two objectives: (1) to document similarities and differences between Haitian healthcare professionals' and community members' perceptions regarding the etiology, presentation, and attitudes towards suicide , and (2) to develop a cultural model of suicide in the Haitian context grounded in respondent explanations, perceptions, and anecdotes. Grounded theory was used to guide systematic data coding and develop a culturally salient model of suicide causation [115]. MAXQDA10 was used for coding and analysis [116]. Qualitative data analyzed in this article addressed suicide narratives, veracity of suicidal ideation claims, suicide commonality, and religious notions related to suicide.

Table 1: Participant Demographics

#	Format	Name[1]	Age[2]	Role	Gender	Occupation
1	SSI	Francois	35-50	CM[8]	Male	Farmer
2	SSI	Louis	>50	CM[8]	Male	Farmer
3	SSI	Sidney	35-50	CM[8]	Male	Catholic Priest
4	SSI	Maria	25-35	CM[8]	Female	Farmer
5	SSI	Isabelle	25-35	CM[8]	Female	Gasoline Seller
6	SSI	Patrice	25-35	CM[8]	Female	Farmer
7	SSI	Cleophas	35-50	CM[8]	Male	Priest Apprentice [3]/Farmer
8	SSI	Casek (Leader)	25-35	CM[8]	Male	Casek[4]
9	SSI	Alan	>50	CM[8]	Male	Farmer
10	SSI	Bernard	25-35	CM[8]	Male	Farmer
11	SSI	Constance	35-50	CM[8]	Female	Farmer
12	SSI	Adelle	25-35	CM[8]	Female	Clinic Secretary
13	SSI	Denis	35-50	HP[5]	Male	Health Worker
14	SSI	Amelie	25-35	HP[5]	Female	Nurse
15	SSI	Elliot	35-50	HP[5]	Male	Health Worker
16	SSI	Henri	25-35	HP[5]	Male	Doctor
17	SSI	Gilles	25-35	HP[5]	Male	Social Worker
18	SSI	Jehan	35-50	HP[5]	Male	Health Worker
19	SSI	Lance	35-50	HP[5]	Male	Nurse
20	SSI	Lionel	35-50	HP[5]	Male	CHW[6]
21	FG	Napolean	25-35	CM[8]	Male	NEC member[7]/University Student
22	FG	Phillip	35-50	CM[8]	Male	NEC member[7] /Pastor
23	FG	Renard	35-50	CM[8]	Male	NEC member[7]/University student
24	FG	Chantale	25-35	CM[8]	Female	NEC member[7] /University Student

[1] Names have been changed to protect confidentiality.
[2] Ages are provided in ranges to maintain confidentiality.
[3] An individual charged with the care of the church (sacristy) in Roman Catholicism. In Haiti, this role commands high respect within the community and involves additional religious counseling to church members when the priest is unavailable.
[4] The Casek is the local elected official. Caseks handle the judicial settlement of any crimes within their jurisdiction. If a case cannot be settled, it is referred to the next highest official.
[5] HP = Healthcare Professional.
[6] CHW = community health worker.
[7] NEC is the 'Noyau d'education communautaire' (*nucleus of community education)*. This small team promotes health education messages to larger audiences in the Central Plateau (for example, on market days, after church ceremonies, and for individuals waiting at the health clinic).
[8] CM = Community Member

Ethical Approval

This project was approved by the Institutional Review Board of Emory University (expedited review, #IRB00042396) and the Haitian Ministry of Health. Prior to asking survey questions, research assistants completed an informed consent process with each participant in Kreyol. Because the majority of rural Haitians are not literate, verbal consent was used.

Findings

Suicide Commonality

> I have worked here since 2002. I know all the zones. There are 58 localities in the section. In these 58 localities I have never heard this. I heard of someone dying from lightning (laughing). Only." – (Male, Healthcare Professional)

> When a person gives death to himself, we call it suicide. Just recently, a little girl killed herself with tobacco oil down the street. Maybe it doesn't happen every day in the zone, but it happens. (Male, Farmer)

Nineteen out of 24 interviewees agreed that *thinking about suicide* occurs often, but there were varying opinions about how often attempting or committing suicide happens in Haiti. After prompting, five out of eight interviewed healthcare professionals reported that saying '*mwen ta touye tet mwen"* (I want to kill myself) was not a serious statement and did not often imply that an individual was in mortal danger or needed urgent help. Healthcare professionals commonly explained that verbal suicidal endorsements were more of an idiom for stress and a 'normal' way of expressing misery and sadness.

> If the person says: "Ah, I will kill myself because I don't find work," "I will kill myself because I don't find food," "I will kill myself because I can't find clothes," "I will kill myself because I cannot send my kids to school," [*all said in nonchalant manner]*, it is all said very often, but does not mean a person will really kill himself. (Male, Social Worker)

Both healthcare professionals and community members maintained that a person may endorse thinking about suicide, usually as a result of an event perceived to be outside of their control like public shame or abandonment by a husband. Sometimes the term 'thinking too

much' was used to describe a situation that precedes suicide contemplation. However, respondents indicated that these moments were brief and could come and could pass with no harmful consequences. Some community members interviewed (n=3) mentioned that they had at one point thought about killing themselves because of miserable life circumstances, but never attempted.

Two community members mentioned that suicide used to be something one would hear about often, in the past. One older male farmer described how, during the former political regime, men killed themselves often. Other individuals explained simply that suicide was something you used to hear about a long time ago, but that it happened much less often today.

> There are people who used to kill themselves during the presidency of Duvalier in the nation. I was a little kid when that happened, but I heard of it: it happened often. (Male, Farmer)

No healthcare professionals volunteered information about the prevalence of suicidal thoughts or actions today as compared to the past. Three healthcare professionals stated that they heard people say they wanted to kill themselves often. One provider took time to explain that community health workers could find people endorsing suicide very easily, but suicide attempts never followed. While thinking about suicide was discussed frequently in the interviews, completed or attempted suicides were talked about comparatively far less amongst both providers and community members. Several interviewees found it hard to respond when asked how often suicides happen or how often individuals in the community thought about suicide, saying it was a 'secretive' thought. Both community members and healthcare professionals implied that if you truly wanted to kill yourself, you wouldn't tell someone because if you did, you could easily be stopped.

> They won't tell you if they want to [kill themselves]. It's secret. If they say, "I have very many problems," they will leave the zone and go somewhere else. You can talk with them about their problems, but they won't tell you they'll kill

themselves. If they want to do that, they won't come to you. If they did, you can talk to them though. (Female, Farmer)

Prominent differences existed between the attitudes healthcare professionals and community members expressed during the interviews. Respondents' willingness to discuss their opinions on the subject of suicide commonality and causes varied greatly. Healthcare professionals often dramatically refuted the suggestion that such events occurred in the community and commonly framed their answers as generalizations applying to all Haitians. Two healthcare professionals became angry during the interview, claiming that Haitians do not engage in suicidal behavior at all. No community members made these claims. Overall, healthcare professionals claimed that completed suicide did not happen often in the community and was not a real problem. One provider insisted that, "In Haiti it is not part of our culture. To find someone who wants to kill themselves is difficult. It is not part of our culture" (JB, healthcare professional). Community members displayed greater willingness and comfort discussing the topic and rarely made claims for the entire Haitian context.

While respondents discussed suicidal ideation with little discomfort, there was frequently awkwardness or avoidance - often manifesting in laughter - when the subject of suicide completion was broached. Several community members claimed they could not speak for others intending to kill themselves: because they were not in their heads, they could not know their thoughts. Only one community member conveyed discomfort and diverted questions related to his beliefs about suicide, while the majority of healthcare professionals (n=4, 57%) claimed they had never heard of suicide happening in the community and refused to speak about it further. Three providers said that individuals would rather go to the Dominican Republic to search for a 'better life' than kill themselves.

> Yes, there are a lot of others who talk about their distress, their economic means. They say that they have the intention to go to St. Domingo to work, to make money. They prefer to migrate, to go to another country, but suicide, no. (Male, Healthcare Professional)

One provider specifically explained that the clinic does not deal with problems of suicide, so he could not know to what extent of severity the problem may exist. The provider mentioned that they do not have the personnel for 'cases like these,' and individuals do not present at the health clinic with these problems. Individuals may present with stress and sadness, but not thoughts of killing themselves. Furthermore, when a provider did share a narrative following illicitation, it was always from outside the primary study area and told with the caveat that this was the only narrative s/he knew and that it demonstrated the rarity of suicide. One provider did say that suicide ideation happened often and that he was happy to help and treat it, however this man was a community health worker, arguably more a member of the local community than other providers like doctors and nurses sent to rural clinics on their year of service. Healthcare professionals overwhelmingly embraced a perspective that suicide was not an important or pertinent issue because it occurs rarely. In light of its rarity, they stated that other health issues needed to be prioritized and mental health services and programs required less attention.

In contrast to the healthcare professionals' views, community members were of the opinion that suicide happened often and was a problem that required attention. No healthcare professionals thought that the problem of suicide deserved more resources and further attention. The majority of community members (n=8, 62%) said suicide happens "often" in the zone while only one provider thought suicide was a common event. These individuals recounted several narratives and are discussed below. Only one community member said that suicide never happened in the community. The remaining community interviewees (n=4, 31%) shared a narrative of a suicidal event and then stated that no others were known. Some community

members recounted two attempted suicides they knew of happening in the past month in order to emphasize that it is an urgent problem that needs to be addressed. The community's elected leader explained that suicide was a common problem in the community:

> Ok. I don't know exactly, but we say that it is something that happens very often. Sometimes people use a string to commit suicide, many people will say that maybe that person had a spirit sent to him that made him try to kill himself. But it happens often. (Male, Casek)

Suicide Endorsement Veracity

All respondents were asked the question: "if someone says they will kill themselves, will they do it?" Most responders seemed to agree that suicidal ideation ('thinking about it') happens quite often; some proceeded to say that it is a 'normalized' thought that happens *very* often. Both healthcare professionals and community members believed that telling someone about intent to commit suicide is very uncommon. However, depending on the community member or the healthcare professional, thoughts differed regarding the endorsement veracity of an individual who *did* share their intent to take their own life.

Of those who elaborated on endorsement veracity, about half (n=10, 44%) of community members mentioned that if someone tells you they will commit suicide, it can certainly happen. Hybert , a male farmer, explained that when someone tells you they are thinking of killing themselves, you must believe them.

> I think that it's the person himself that chooses to kill himself. Maybe he doesn't have opportunity, but if he says it, he can do it. Some people who mention that [suicide], they just get up, they are discouraged with life, they don't see anything else to, so they kill themselves. (Male, Farmer)

The other half of community members interviewed found it difficult to determine if the endorsement would be acted upon or not. Several community members claimed that the question was impossible to answer because it is not possible to know or understand what someone else is thinking. The elected community leader explained: "as I don't know any of the

persons who say that, I don't know their problems, but maybe some of them can say that, and do it. But it can be done too, that they say that and none do it" (Casek, community member). Four individuals initially refused to answer the question, perhaps an indication that it may not be culturally salient to explain another individual's thoughts and actions.

Two women mentioned that they had thoughts of killing themselves because their husbands died or left them and it was difficult to maintain respect in the community. A man also mentioned that he had thought about it in the past when life was miserable. These community members emphasized that even though they had thought about it, they did not tell anyone else, nor did they do it.

> So I can tell you that it happens very often [suicidal thoughts]. Even me, that has happened to me. In December 23rd, my husband died. They said he died from cholera, but he didn't. People here threatened me, said they would kill me, so I had to leave. I have children who live in Mirebalais, so I went there and stayed with them for a while. So even me, I thought about that sort of thing in my life. But, I never did it. (Female, Farmer)

They went on to explain that suicidal thoughts are temporary if one finds help or waits long enough. "Yes, I think they can [commit suicide], but it's a quick idea. They can try and tell their pastor, when they talk to him, they won't think to kill themselves, and everything will be ok" (Nolande, community member). Only one community member thought that an individual would endorse suicide for attention with no intent to complete.

> All can do it. In the opposite case, none can do it. Because when a person has a bad thought like that, in a blink of an eye that idea can be changed. If that person has a problem, and they want to commit suicide, if that problem is solved, they can rid that idea. But if the problem doesn't go away, they can kill themselves. They can also tell you that just to put pressure on you, but that person would not actually do that [suicide]. For example, if I ask you for something and you don't give it to me, I can just say that to make you give that thing to me. But that person would never really do it. (Male, Farmer)

No other community member mentioned attention-seeking endorsements. However, far fewer healthcare professionals agreed that an individual verbally endorsing suicidal intent

was a serious problem. The overwhelming majority (n=5, 63%) believed that individuals endorse suicidal ideation for attention or to gain some materials (like money or food). Many initially responded that these endorsements are lies and that individuals will never attempt or commit suicide.

> Those people who say they want to kill themselves, it is FALSE. They are lying…. I am Haitian, I know the Haitian mentality. No one kills themselves. It is not a part of our culture. We support a lot in Haiti. It is false [*forcefully*]. You cannot find someone who wants to kill himself. (Male, Doctor)

Another healthcare professional said that when you hear someone say they want to take their life, it is like they are telling a joke. He explained that this sort of thing happens all the time, that members of the community will feel that their misery is too much and that they want to give up. Saying, "'I want to take my head' is just an idiom, not a true intent." Another was of the same opinion and said, "To find someone who says they want to kill themselves I find it ***very*** (*said with force)* normal. They are very numerous, people who say they want to kill themselves" (Male, Social Worker). The social worker implies here that suicidal endorsement is so normalized that it is not a big deal. One provider said that many community members tend to formulate things that do not exist. Two providers mentioned that individuals who feel hopeless will choose to move to the Dominican Republic as their last resort, but never kill themselves. They went on to say that suicide was not an option in a Haitian's head; they would much prefer to find work in another country than to think about suicide. The majority of healthcare professionals believed individuals endorsed suicide for attention, lack of money, and lack of work.

> If someone says 'I want to kill myself' and if they find out that nobody is going to give money, no one is going to give work, it could arrive that "Ah, Yes!, I have thoughts of killing myself but I won't do it" (*said in a nonchalant manner*). (Male, Social Worker)

In fact, only two of eight healthcare professionals fully agreed that verbal endorsements contained true intent and that suicide was common in the community. These two providers

were born in the Central Plateau and worked as a nurse or community health worker in their home-town. One nurse who returned to work in the Central Plateau, his hometown, as a healthcare professional, explained why many doctors and nurses in the Central Plateau explain that people lie when they say they want to commit suicide:

> The people who have said this must be better off than most people here, they are probably not from here. They probably don't know what life is like. If you don't know what it is like to starve, to go to bed hungry, you don't understand it. When you are starving you are capable of anything. You are capable of breaking bars down to get food. You are capable of even killing someone. You can think poorly. You could also be capable of killing yourself. If you have not experienced that, you don't understand it. (Male, Auxiliary Doctor)

He did not become defensive like the other healthcare professionals and supported that community members would not simply say they were thinking of suicide to get attention, they say that because there are real problems that cause much suffering, and those thoughts are normal when one is living in such misery. However, healthcare professionals consistently said that although suicidal thoughts happened often, these ideas would never translate into suicidal behavior.

Serendipitously, during follow up interviews, we interviewed a community member who had recently attempted to kill himself by hanging and soon after interviewed a healthcare professional who had recently worked with that patient. The community member explained that his attempt resulted from accusations in the community that he stole many objects and was untrustworthy. He admitted to feeling helpless because he lives in extreme poverty and is dependent on his parents. His mother heard him choking on the rope in the middle of the night, ran outside, and cut him down from a tree near the house. However the healthcare professional, in our interview, explained that this man attempted suicide for attention with no intent of dying, as proven that he attempted with his family close by. This is one example of the

incongruity between community member and healthcare professional perspectives and of the healthcare professional trying to minimize the issue.

Suicide Narratives

The 14 community members interviewed shared a total of five narratives of attempted suicide and 10 of completed suicide, plus one narrative of a deceased individual whose cause of death was unknown and who was known to have made many prior attempts. These were all assumed to be unique (although one similar narrative was recounted by three different individuals). The healthcare professionals shared a total of four narratives of attempted suicides and five of completed narratives. None of the healthcare professional narratives overlapped with the community members' narratives; this is expected as only two healthcare professionals' narratives happened within the zone. Healthcare professionals recounted more male completers and lay respondents recounted more female completers. In total, 25 narratives were shared, of which 3 may not be unique (See Table 2). Box 1 captures some powerful suicide narratives captured in the field.

Table 2: Suicide narratives shared amongst all respondents

Narratives from community members				Narratives from healthcare professionals			
Sex	**A/C[1]**	**Attributed cause**	**Method**	**Sex**	**A/C[1]**	**Attributed cause**	**Method**
F	C	Unknown	Pesticide	F	C	Sickness	Cord
F	C	Unknown	Pesticide	F	A	Unknown	Unknown
F	C	Pregnancy	Pesticide	F	A	Misery	Cord
F	C	Unknown	Pesticide	M	C	Public shame	Cord
F	C	HIV	Pesticide	M	C	Unknown	Cord
F	C	Pregnancy	Pesticide	M	C	Poverty	Cord
F	A	Misery	Knife	M	C	HIV	Machete
M	C	Public shame	Unknown	M	A	HIV	Knife
M	C	Public shame	Cord	M	A	Love problems	Cord
M	U	Sickness	Multiple				
M	A	Sickness	Cord				
M	A	Mental illness	Cord				
M	A	Poverty	Cord				
M	A	Love problems	Cord				
N/A[2]	C	Duvalier regime	Cord				

[1] A=attempted suicide and C=completed suicide, U=unknown cause of death, but several recounted suicide attempts

[2]Two individuals spoke about witnessing/hearing about suicides occurring often in the past, but few additional details were shared.

Healthcare professionals shared more male narratives, whereas community members shared an even ratio. The same fable was told twice (See Box 2), once by a healthcare professional and once by a community member. Both individuals described all the events of the story similarly. The healthcare professional told the story to illustrate that Haitians may often have the thought to kill themselves, but will always find a reason to keep living. The community member told it when the interviewer prompted him to share a story, if he knew one, about an individual who had attempted or completed suicide.

There was a proliferation of narratives identifying poverty and misery as the underlying cause of suicidal behavior (both attempts and completions). Additionally, some narratives were told about men who killed themselves as a result of public shame or false accusation. The inability to repay a debt, enduring false claims that they had stolen something, or fear of situations involving police reportedly drove at least three men to kill themselves. Two suicidal deaths were believed to be caused by shame associated with individuals who contracted HIV from an individual other than their husband or wife. Two additional narratives were caused by sicknesses that were either unidentifiable or incurable. All of the participant identified causes reveal that shame was a severely distressing circumstance resulting from their troubles (largely due to poverty).

Box 1. Suicide narratives from field notes

Marc is 76. He is unable to walk. His vision is cloudy due to longstanding cataracts. He has one son who left for the Dominican Republic a year ago and from whom he has heard nothing. He is hungry. He has no money. He relies on neighbors to bring food to him. He thinks of killing himself. The only reason he does not is because custom dictates that when you die everyone comes and visits your house and he is embarrassed for others to see how he lives.

Esther is 24. She gave birth to 2 kids. Her husband left her. She remarried a man who had 2 kids so now she has 4. She and her husband have no money, no house. They live with her mother-in-law who tells her she is useless and it would be better for her to die. Her kids go hungry. She cannot send them to school. She tried to kill herself, her neighbors cut the cord. She still wants to die.

Mary was 19. She was in high school in a nearby town. She came home on the weekend and told her family she was going to the market. She told the vendor she needed the pesticide for her father's tobacco fields. She walked home and went into her room. The note she wrote told her parents not to worry and explained how she wanted to be buried. She drank the pesticide and died. No one knows why.

Box 2.

"There was a person who was very very very poor. His life was very hard . He lived in a lot of misery. He decides then one day to commit suicide. All that was left in his house was three potatoes. He takes his three potatoes and puts them in the fire to cook them. He then takes the three potatoes. When he arrives in the place where he wants to kill himself he climbs a tree and puts the cord around his neck and attaches it, but first he will eat his three potatoes for it all he has left on the earth. He will eat the potatoes and after the potatoes he will kill himself. Each time he eats a potato he takes the skin off and throws it to the ground. So he eats the first potato. He eats the second potato. And now during this time he eats the third potato. It is time for him to take his life. But, before killing himself he looks to the ground. What does he see? He sees another person who is eating the skin of the potatoes that he threw to the ground. He says "OH! There is someone worse than me. There is someone who doesn't even have potatoes and I had potatoes." He throws the cord away and jumps out of the tree and continues living. That is a story. It is just to show you that each person, even if he has in his mind to kill himself, finds a reason to keep living. Maybe a kid, maybe another person, he finds a reason not to do it." – Male, Social Worker

Suicides completed by tobacco pesticide poisoning occurred exclusively among women. Completed suicides among men used either a sharp object or a cord to hang themselves. While no women were described as committing suicide due directly to public shame, causes such as pregnancy are generally related to a fear of social repercussions and the results of living in a community that shames and devalues the individual when he/she contravenes accepted social norms. All narratives illustrating an attempted suicide ended with a community-mitigated response where a neighbor or family member saved the individual by cutting down the noose or interrupting the use of a sharp object. Common methods used both in completed or attempted suicides were poisoning (most often with tobacco pesticide but occasionally battery acid) and hanging oneself. Several community members and providers mentioned that the Dominican Republic was often a 'last resort' and two narratives resulted after a failed attempt to find work in the DR or the loss of a husband who moved to the DR, leaving his wife alone to raise children.

The act of suicide was not described as a product of being sad, rather as a derivative of misery (living in poverty, lack of work, inability to provide for oneself or one's family), strained love relationships, or public shame.

> I know of someone [who] used to have a problem and they killed themselves. In 2006 a young person was pregnant, she was at school. She couldn't tell her parents. She drank some oil, some poison, and then she died. It's not because of the sadness though. (Male, Farmer)

Providers did not share any suicide narratives that occurred in the zone they served. All providers could tell at least one story but often cloaked the explanation with an insistence that their story was unique and suicide was something very rare. One provider became defensive after telling the story explaining that he is quite old, and only knows one story, so, suicide must be rare in the community. Another provider (a female nurse) repeatedly replied that she thought 'nothing' of individuals that endorsed suicidal ideation and that in one's lifetime you could encounter one or two suicides, but the issue is of little importance in the community.

While it was difficult to probe providers to share narratives, community members easily recalled one or two narratives each. Community members were able to recall and share narratives in more detail and never offered a caveat that their story was unique.

Religion

> I cannot say anything because I am Christian. When I have problems, I just pray to God. If something seems impossible, he sends me a better way, I'm not responsible, I just pray. These persons (suicidal individuals) are just unique. It is a sin. Sinners kill themselves. That's what I think about that. (Female, Farmer)

When asked why certain individuals commit suicide, all community members mentioned that suicide was more common amongst individuals who did not go to church. Non-church-goers were perceived to be more susceptible to suicide than a person who prayed and attended church regularly. While providers did not mention non-church-going as a risk factor, they did mention church as a possible resource for those suffering from suicidal ideation. Most respondents mentioned that Christianity defines suicide as a sin and that individuals who kill themselves will suffer in hell. One social worker explained that, from birth, Haitians are taught that they will burn in hell if they commit suicide. He elaborated that these beliefs form a

protective effect because the fear of an eternal afterlife in misery stops most people from killing themselves, even when living in desperate poverty. Community members echoed these beliefs, explaining that God knows suicide is a crime and will punish any individual that completes it. Additionally, many community members explained that suicidal ideation and behavior was a weakness, and that individuals who did not attend church or read the Bible were at higher risk for having suicidal thoughts.

> There are some individuals who commit suicide here, but there are not a huge number because of the Christian belief. Our faith tells us that if someone kills themselves, they will not encounter Christ. They will go to hell and not meet God. There are some people who do not believe, who do not go to church. It is these people that think to kill themselves. (Male, Doctor)

The solution for suicidal thoughts was often to speak with a pastor or a priest and to pray to God for forgiveness. Providers mentioned that if an individual believed in God, they would send them to church to remedy their problems. It is thought that God takes suicidal thoughts out of the head of the suffering. Interestingly, two women mentioned that they could not speak about suicide and its etiology because they were Christian.

Two female community members identified a difference between natural illnesses (sometimes called God sicknesses) and spirit sickness (caused by Voudou rituals). If an individual killed himself because of a natural illness (like tuberculosis or HIV) it was clearly a sin and severely punished. However, if one has spirit-causing sickness, killing oneself may be justified.

> No, it's not good [suicide]. It's not acceptable. But when someone has this idea, it may be because someone sent a devil to you. But if you try it without that problem, if you do it because you have your own problems, it's a sin. (Female, Gasoline Seller)

The narratives shared by these women also reflected this perception. The same woman above explained that when a woman killed herself because she was pregnant, it was a sin.

However, sent spirits are an exception and are not punishable under Christian faith. This Vodou explanation was not mentioned by healthcare professionals.

Vodou as an explanatory model for suicide

> It's a bad thought that someone puts in someone's head, it's magic, a spirit. But not natural. It can't happen naturally, for someone to kill themselves. – (Female, Farmer)

Community members mentioned Vodou more often (n=8 (67%) vs. n=2 (25%)) compared with providers. Only two providers mentioned that Vodou may be a cause of suicide, however several community members drew on this as an explanation for completed suicides. Amongst all participants, none of the suicide narratives that were shared specifically referenced 'sent spirits' or Vodou as a cause of suicidal behavior within the story (although it was mentioned as a general cause). It was only in response to prompting for more explanation about the cause that individuals began to discuss spirits as causing suicides. Of the two providers who mentioned Vodou, both explained it as the 'mentality of Haitians' and not their own personal beliefs. The two providers went on to explain that it is generally believed a person is pushed by a devil to kill him or herself, and it is not an action out of their own will. Two providers said that, although 'unscientific', most Haitians would attribute a '*force mystik' (sent spirit)* as the main cause of suicide.

Even the Catholic Priest spoke about Vodou in some detail, explaining that because Haitians live in a country with no formal justice, a person sends spirits as the only way to find justice. In Haiti, one can often find individuals who kill themselves because someone sent them a spirit. He went on to explain that because so much of life in Haiti is perpetually devastating, people blame evil spirits or use evil spirits to find revenge and justice. These sent spirits often make people kill themselves. The community leader elaborated on a similar point when asked to explain why one young girl killed herself:

> Many people guessed, they all gave their opinion. They said maybe that girl was pregnant. We all knew her parents were very strict, and maybe she didn't want to tell them. Maybe she was scared to talk to them, so she just killed herself. The others guessed that, in Haiti sometimes, there were some families with bad spirits that lived within the family. Maybe it was the bad spirits that made her kill herself. (Male, Casek)

A man in the community mentioned that doctors may not believe suicide happens because they do not encounter "spirit-related illnesses in their work." It is logical then, that they might not endorse suicide happening or even be aware of it occurring. Suicidal behavior was compared to cholera (at the time claiming many lives in the rural community) by a respected man in the community. He explained, "The cholera, if you run to go to the hospital, you can have chance to live. However, if you mention suicide, there's nothing you can do. You can die in the blink of the eye. (*Laughs*). You don't even love your life (*laughs very loud*). So it's the person that has something in their head, a force (*meaning sent spirit)* that urges that person to do that." (Male, Priest Apprentice/Farmer) The farmer eluded through this statement that suicide has neither cure nor prevention, thus, it is more difficult to deal with than cholera. Community members explained that Vodou must cause suicide, ascribing a 'sent spirit' as the difference between individuals who suffer and do not choose to kill themselves and those who engage in suicidal behavior.

Resources

> Maybe, what I can see for those persons [suicidal individuals], those persons need to speak to people a lot. They need advice. It will take anpil chita [a lot of chairs], to sit together and mobilize help. (Male, Priest Apprentice/Farmer)

> So the oil that they had before, it's not for people, it was to put on tobacco to kill insects. The people who bought it saw what the oil can do, so they drank it themselves. But now the chief stopped it, you can't buy it. You have to be a farmer to buy it (Female, Farmer)

Respondents were asked to explain solutions and sources of help individuals might access when suffering from suicidal thoughts. The most common resources mentioned,

particularly among community members, were going to church, praying to God, and seeking the help of a priest or pastor. The majority of providers mentioned that individuals suffering from suicidal thoughts need specialized help from psychiatric institutions. It was also mentioned, however, that these institutions were not realistically accessible to individuals in the Central Plateau as none existed in the area. Moreover, providers also mentioned the need for more psychiatrists. No provider suggested that individuals go to the health center for help, nor did they mention being able to provide much help beyond advising suicidal individuals that things will eventually get better. One local nurse said he sometimes offered his severely impoverished patients money once a month, but could do little else. The focus group with lay health educators discussed the difficulty of providing help for something that the community knew little about. Few community members knew what psychology meant, knew about the medical specialty of psychiatry, or how they might be able to relieve mental problems.

Almost every community member (n=10, 83%) identified praying and church-going as the primary solution to suicidal thoughts and behaviors. Community respondents mentioned the community's ability to help individuals cope with suicide, something providers did not suggest at all. Individuals told narratives about instances where families helped other families in need, and offered an example of what they might do for a friend who was suffering from something like suicidal ideation or feelings of hopelessness. Community members were confident that their community was a powerful source of support. Only one community member (a secretary at the health center) mentioned the possibility of sending a suicidal person to a psychiatrist. Correspondingly, she mentioned the need for trained mental health professionals to be accessible since she did not think any currently existed in the Central Plateau.

One respected female community leader explained that as more suicides resulted from individuals poisoning themselves with tobacco pesticide, the Casek (the political head of the

community) instituted a new policy where pesticide sellers could only sell to particular men they knew were farmers in the region. The Casek confirmed the report and said it is still in place to date and that there were now fewer pesticide-induced suicides.

Discussion

In this study, the explanatory models of suicide are inextricably linked with the Haitian socio-cultural context. We found differences in worldviews of healthcare professionals and community members that may affect how suicide is prioritized and perceived within communities.

While all respondents agreed that thinking about suicide is common and seemingly normalized, perspectives differed on the commonality of suicide behavior in the Central Plateau of Haiti. Compared to community members, healthcare professionals were less likely to consider completed suicide a 'common' and important issue. Healthcare professionals are often relocated to a rural area on a government-assigned year of service to the state. Typically, the few individuals who are able to attend medical or nursing school in Haiti were born in Port au Prince or another large city [87]. Differences in background and access to opportunities may shape different worldviews and create disparate perspectives on important health issues [117, 118].

In the Haitian context, the confluence of healthcare professionals' comparatively affluent background, previous urban life where pesticides are not readily available, and tendency to dismiss Vodou beliefs may contribute to a differing, less accepting attitude toward suicide compared to the community members. Providers are perhaps constrained because they self-identify as "educated"(educated individuals have certain social expectations), causing them to minimize community members' worldviews, traditions, and beliefs. More research is needed

to further elucidate the factors that contribute to this observed discrepancy in suicide perception.

Healthcare providers' skepticism about the veracity of suicide endorsements in our study challenges findings from other countries indicating that as education level increases, individuals are more accepting of suicidal behavior [119, 120]. Recent literature in China found that suicide communication signified true suicidal intent [114], providing support for the contention that individuals expressing suicidal thoughts are at high risk and require immediate attention. Previous studies have found that health professionals' attitudes towards suicide may affect their ability to intervene appropriately [121].

In order to establish culturally salient and effective prevention and education programs for suicide, one must understand local socio-cultural attitudes and perceptions of suicide causation. A New Zealand study found that health care workers had a positive attitude towards self-harm patients, but that they were not confident working with them to improve their situation [122]. In our study, while Haitian healthcare professionals did not share concerns about their confidence working with suicidal individuals, they did indicate that the clinics they worked in did not have the proper capacity to care for these individuals. Moreover, healthcare professionals in rural Haiti never mentioned an individual endorsing current suicidal ideation or a failed suicide attempt seeking care at a clinic. These findings suggest that suicide may have different meanings in the clinical setting compared to the lay community. Mental health conditions like suicide may not currently be appropriately addressed through allopathic medical care provided in the community. It may be the Haitian 'clinical' setting that causes denial of suicide due to the use of alternative care seeking behaviors predominately outside of the allopathic medical context. When questioned, community members believed religious leaders were the ideal support mechanism for suicidal thoughts and behaviors. Perhaps the fact that

care was not available nor sought at allopathic health centers led providers to strongly believe that suicidal ideation did not often lead to suicidal attempts or behavior. If we are to truly understand the scope of the issue of attempted suicide in the Haitian context, surveillance in the allopathic medical context alone may not be sufficient.

Previous studies have shown that increasing the capacity of medical personnel to address mental health issues in the community opens a pathway for individuals suffering from suicidal ideation to seek care [5, 63]. However, given that religious resources and community support were the most common sources of help mentioned by community members in our study, health clinics may not be the best location to increase capacity to deal with these issues. Innovative and multi-sectoral approaches are needed in preference to interventions that operate exclusively inside the allopathic health sector. In addition to increasing the capacity of healthcare professionals, communities must be involved in participatory projects to identify appropriate providers, religious leaders, and community leaders who may serve as mental health resources. Multi-pronged approaches such as economic empowerment programs and shame reduction mechanisms can complement and enhance allopathic health-based approaches to address the mental health burden [7, 47, 58, 60-62, 123-126].

Personal communication with Haitian medical doctors now living in the US corroborated our findings that Haitian-trained healthcare professionals tend not to feel those that endorse suicide ideation will act on these endorsements. One Haitian clinician in the US stated: “it feels like they will try to push the person to see if he/she has the courage to do it [suicide].” This doctor also agreed that if the parents of a suicidal individual believe in Vodou, they will most likely take him/her to the Vodou priest for treatment, rather than seeking allopathic care.

While community members expressed concern for the commonality of suicide ideations, attempts, and completions in their community, they also exhibited attitudes that were either

tolerant or condemning depending on the perceived cause. Focus groups conducted in China found community attitudes towards suicide to be tolerant, sympathetic and generally accepting of suicide. Nonetheless, substantial underlying stigmatization of the family of an individual attempting or expressing suicidal ideation appeared to be common as family members are considered to have failed the individual [105].

In China, community members also underestimated the role of mental illness as a cause of suicide. This finding was echoed in our interviews with community members who cited strained love relationships, poverty, and public shame as causes of suicidal behavior, but not mental illness. In rural Haiti, suicide appears not to be perceived as a derivative of mental illness or a result of sadness. This is consistent with other studies in low-income settings in which depression is not found to predict suicide [13, 22, 127]. Rather, impulsive acts, usually related to interpersonal conflict, precede suicidal deaths. It is noteworthy, however, that the study teams' concurrent epidemiologic survey found depression to be associated with, but not necessarily predictive of, suicidal ideation in rural Haiti. More research is needed on this topic in order to identify suicide pathways -from ideation to attempts to completions- in the rural Haitian context. Cultural factors such as these must be considered when designing education and prevention programs for depression and suicide.

Respondents were hesitant to attribute an explanation for suicidal attempts or completions. This hesitancy may be due to previously described notions of common mistrust and fear of individuals seeking revenge due to false accusations in the Haitian context[70, 80]. As illustrated in the interviews presented in this paper, any divergence from cultural norms may well contribute to stress and an increased propensity to attempt suicide, as documented in other settings [128].

Distinct differences were found in the methods employed by females and males to commit suicide. While other modalities were used, deaths by pesticide poisoning were exclusively reported among women. Narratives involving male suicides involved the use of sharp objects or death by hanging. Healthcare professionals reported more male completed suicides (aligning with western suicidal profiles), while community members recounted many more female completed suicides. Other studies have attributed the observed higher suicide rates in rural areas to easy access to toxic pesticides. Recent epidemiologic findings from rural Haiti found that factors associated with endorsing suicidal ideation were: scores on a locally-adapted depression screener, lacking care if sick, alcohol use, and ever having been to a Vodou priest [93]. Our findings align well with these factors, particularly the notion that Vodou beliefs and care seeking are intertwined with the socio-cultural understanding of suicide in rural Haiti. More research is needed to understand how the Haitian socio-cultural context may affect conceptualizations of the etiology of other mental illness in rural Haiti.

One third of the world's suicides are estimated to be caused by pesticide poisoning. Due to this and the narratives recounted during our interviews, an effective intervention in Haiti may be to decrease access to deadly pesticides or replace current pesticides with altered formulas that either induce vomiting or are less deadly [26, 129-132]. As mentioned previously, respondents recounting suicidal attempts or completions do not attribute these behaviors to sadness or mental illness. In the literature, two types of suicides are commonly documented: premeditated and impulsive. The suicide narratives recounted by our Haitian respondents suggest that most suicides in rural Haiti are of an impulsive nature. Premeditated suicides are often preceded by warning signs, which may include vocalizations of intent. However, impulsive individuals may not tell anyone because the suicide attempt is sudden with little forethought. This may explain why individuals insisted that, if a person was suicidal, there was no way to

know because they would not share it with anyone. Additionally, the majority of suicides recounted in the narratives shared were precipitated by shame induced through extreme poverty or personal circumstances evoking stigma from the community (such as accusations of stealing). Programs to reduce poverty and community- based shame may be an effective mechanism to avert suicides fitting this profile. The idea that the suicidal process is a smooth continuum from ideation to planning to attempting certainly needs further examination in the Haitian context. It will be necessary to consider these findings when shaping future interventions and education regarding suicidal behavior in Haiti.

Religion played a major role in respondents' attitudes towards and explanations for suicidal behavior. Lack of praying, church-going, and participation in the Christian community was understood as putting an individual at greater risk for suicidal ideation and suicidal behavior. Additionally, Haitian Vodou was the central explanatory model used to explain why some individuals killed themselves and others did not, despite similar life situations. Vodou explanations of 'sent spirits' as the primary causative agent for completed suicide may serve as a way to reduce stigma through eliminating personal responsibility for suicidal behavior. Vodou is a taboo subject in rural Haiti [81] and its influence is consequently likely to be under-represented in our data. Attributing suicidal behavior and deaths to Vodou may override the severe consequences within the Christian religious paradigm, allowing individuals to be more accepting of these suicidal individuals. Similar paradigms are seen in Turkey and the Netherlands [133-135]. Although Vodou may create more acceptance for these individuals, past literature reveals that individuals with more accepting attitudes toward suicidal behavior are much more likely to make a plan to kill themselves than those who do have such beliefs [136]. Specific religious community contexts (specifically the complex hybridization of Vodou and Catholicism)

must be taken into account and addressed when implementing suicide prevention or treatment programs in Haiti.

A deep understanding of the economic and cultural practices of Haiti's rural regions is integral to the design of community based interventions. This study begins to shed light on the perceived causes and culturally salient solutions for rural Haitians at risk for suicide. Our data indicate that impulsive suicide attempts are perceived to follow strained love relationships, poverty, and other life events that cause public shame. Overlain on these causes was a perception that any completed suicide was ultimately the result of a sent spirit. Several community members spoke about the supportive network and healing power of Christianity and its community. Importantly, our findings support Kushner's (2005) argument that suicide is more likely to be caused by social integration than by social disintegration in settings where a fatalistic worldview is normative [34, 41]. In the Haitian context, suicidal individuals may be reacting to integration into a society that devalues and shames them.

Appropriate interventions for the Haitian context may be to strengthen support pathways for those in interpersonal crisis, restricting access and/or types of pesticides available, and educating religious leaders and communities on factors that exacerbate suicide risk and on culturally salient prevention mechanisms. Through the training of local lay mental health counselors, it is feasible to provide advanced psychosocial interventions in LMICs. Such an approach is certainly transferable to a rural Haitian setting. Recent literature is building evidence-base that an apprenticeship training model provides a useful framework for the implementation and sustainability of mental health interventions [137]. Other interventions (including cognitive behavioral therapy and task shifting models) have proven successful in other LMICs [46, 62, 64, 125]. However, before interventions can be appropriately designed and targeted, more research is needed determine (1) the suicide rate, (2) where individuals go

before attempting suicide (e.g. clinics vs. Vodou Priest) and (3) the best predictors of suicide attempters. Suicide must be incorporated into existing mental health and violence related research if we are to adequately address its consequences.

Strengths and Limitations

Our study has three main strengths. First, the use of qualitative methodologies was essential to uncover values, perceptions, and attitudes towards suicide. As so little is currently known about suicide in rural Haiti, the exploratory nature of this study offers preliminary insight into the topic, and generates new questions necessitating further research. While the study is restricted to a specific rural Haitian setting, it has significant implications for the development of programs and infrastructure for mental health and suicide throughout Haiti and in other similar low-income countries. Second, in our experience, the concurrent epidemiologic exploration of depression using culturally adapted quantitative screeners left unanswered questions about what suicide endorsement meant in the local context. Without qualitative compliments, responses to mental health screeners or other constructed questionnaires (even if they are locally validated) can be insubstantial [138].

Despite providing insight into Haitian constructs of suicide, our study is not without limitations. The dynamic created between an 'outsider' (the study team) and the interviewee along with the use of a translator may have influenced how individuals responded to questions. Healthcare providers' tendency to attribute patient's suicidality claims as 'fake' to get secondary benefits – such as attention, a place to stay, and some food - is a common phenomenon in the US. Therefore, the division between healthcare workers and lay community may be a reflection of more widespread provider assumptions and unrelated to the unique local context. Fourth, given our qualitative format and our limited study location, our results cannot be generalized.

They nonetheless offer powerful indications of participant opinions and attitudes towards suicide commonality and etiology and have implications for other LMIC settings.

Conclusion

Community-level and individual-level attitudes about suicide are important components in the causal pathway to suicidal behavior. Understanding them is essential to the design, targeting, and implementation of public health interventions. A concerted effort is needed within governments and local organizations to assess potential burden of suicide as an important component of addressing a growing leading cause of death worldwide. Much more research is needed using various research methodologies (suicidal autopsies, systematic review of existing police reports relating to suicide, and qualitative explorations with suicide attempt survivors) in order to gain a more robust and imperative understanding of suicide in the LMIC context.

Public Health Recommendations

1. **More research to inform appropriate and effective multi-sectoral interventions and educational programs**
   The dearth of literature relating to suicide in the Haitian context makes it difficult to offer specific suicide intervention recommendations. Initial priorities must include further epidemiological research to determine suicide prevalence in Haiti as well as further qualitative studies including psychological and suicidal autopsies. Additionally, a clinical study of individuals presenting with suicidal complaints to medical settings must also be completed. With this information, we can triangulate data resulting from further epidemiologic research and qualitative methods to better define suicidal risk factors, common means of self-inflicted harm, and help-seeking behaviors. This valuable data can then inform culturally salient interventions to reduce morbidity and mortality due to suicide. Mental health interventions that intersect with economic, education, judicial, and health sectors have the potential to have compounding beneficial effects not only improving health outcomes, but reducing poverty, increasing self-efficacy, and promoting human rights.

2. **Establishment of a surveillance system**
   Alongside additional research, medical schools and other health training institutes must agree upon a standardized reporting mechanism for individuals presenting with suicidal behavior or intent. A surveillance system should incorporate personnel across sectors including police, local elected leaders, and religious leaders. Additional research will inform the most appropriate stakeholders and mechanisms.

3. **Community based referral system**
   In rural areas, effective measures to address or prevent suicides may be established through a network of community health workers and local leaders. The creation of a

community based referral system has shown promising results in addressing mental health in resource poor settings [60, 62]. This powerful tool can help identify persons in imminent danger and refer them to appropriate care to prevent premature death. The 'appropriate care' pathway will need to be defined through further research.

4. **Future consideration and care when exploring sensitive topics in LMIC settings**

This study illuminated important findings relating to the designs and structures researchers utilize when exploring topics like mental health and suicide. Locally-validated instruments are essential components if we are to acquire reliable data. We must pair the development and use of culturally salient quantitative instruments with qualitative methodologies to understand important nuance that numbers cannot reveal. In our research study, simply using a depression inventory would have severely limited our insight and understanding of the differences between the meaning of suicide in the clinical versus lay context. Additionally, healthcare providers were hesitant to believe that genuine suicidal endorsement existed in their rural community. These perspectives are invaluable for decision-makers when creating programs to address sensitive topics like suicide.

References

1. Prince, M., et al., *No health without mental health.* Lancet, 2007. **370**(9590): p. 859-77.
2. Patel, V., et al., *The movement for global mental health.* Br J Psychiatry, 2011. **198**(2): p. 88-90.
3. Mathers, C.D. and D. Loncar, *Projections of global mortality and burden of disease from 2002 to 2030.* PLoS Med, 2006. **3**(11): p. e442.
4. WHO, *Suicide prevention and special programmes.* , 2011, World Health Organizaion: Geneva.
5. Bertolote, J.M., et al., *Suicide attempts, plans, and ideation in culturally diverse sites: the WHO SUPRE-MISS community survey.* Psychol Med, 2005. **35**(10): p. 1457-65.
6. Hendin, H.P., MR., Vijayakumar, M., Pirkis, J., Wang, H., Yip, P., Wasserman, D., Bertolote, JM., Fleischmann, A. , *Suicide and suicide prevention in Asia*, 2008, World Health Organization, Department of Mental Health and Substance Abuse.
7. Sharan, P., et al., *Mental health research priorities in low- and middle-income countries of Africa, Asia, Latin America and the Caribbean.* Br J Psychiatry, 2009. **195**(4): p. 354-63.
8. Razzouk, D., et al., *Scarcity and inequity of mental health research resources in low-and-middle income countries: a global survey.* Health Policy, 2010. **94**(3): p. 211-20.
9. Patel, V., et al., *A renewed agenda for global mental health.* Lancet, 2011. **378**(9801): p. 1441-2.
10. Kakuma, R., et al., *Human resources for mental health care: current situation and strategies for action.* Lancet, 2011. **378**(9803): p. 1654-63.
11. Raviola, G., A.E. Becker, and P. Farmer, *A global scope for global health--including mental health.* Lancet, 2011. **378**(9803): p. 1613-5.
12. Bertolote, J.M., et al., *Suicide attempts, plans, and ideation in culturally diverse sites: the WHOSUPRE-MISS community survey.* Psychol Med, 2005. **35**(10): p. 1457-1465.
13. Nock, M.K., et al., *Cross-national prevalence and risk factors for suicidal ideation, plans and attempts.* Br J Psychiatry, 2008. **192**(2): p. 98-105.
14. Vijayakumar, L., et al., *Suicide in developing countries (2): risk factors.* Crisis, 2005. **26**(3): p. 112-9.
15. Bhui, K.S. and K. McKenzie, *Rates and risk factors by ethnic group for suicides within a year of contact with mental health services in England and Wales.* Psychiatr Serv, 2008. **59**(4): p. 414-20.
16. Hunt, I.M., et al., *Suicides in ethnic minorities within 12 months of contact with mental health services. National clinical survey.* Br J Psychiatry, 2003. **183**: p. 155-60.
17. Manoranjitham, S.D., et al., *Risk factors for suicide in rural south India.* Br J Psychiatry, 2010. **196**(1): p. 26-30.
18. Ruzicka, L.T., *Suicide in countries and areas of the ESCAP region.* Asia Pac Popul J, 1998. **13**(4): p. 55-74.
19. Murray CJL, L.A., *Global Health Statistics: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020.* , 1996b: Cambridge, MA.
20. Sundar, M., *Suicide in farmers in India.* Br J Psychiatry, 1999. **175**: p. 585-6.
21. Bertolote, J.M. and A. Fleischmann, *Suicide and psychiatric diagnosis: a worldwide perspective.* World Psychiatry, 2002. **1**(3): p. 181-5.
22. Nock, M.K., et al., *Suicide and suicidal behavior.* Epidemiol Rev, 2008. **30**: p. 133-54.

23. Bi, B., et al., *Comparison of patients with and without mental disorders treated for suicide attempts in the emergency departments of four general hospitals in Shenyang, China.* Gen Hosp Psychiatry, 2010. **32**(5): p. 549-55.
24. Pearson, V., et al., *Attempted suicide among young rural women in the People's Republic of China: possibilities for prevention.* Suicide Life Threat Behav, 2002. **32**(4): p. 359-69.
25. Gunnell, D. and M. Eddleston, *Suicide by intentional ingestion of pesticides: a continuing tragedy in developing countries.* Int J Epidemiol, 2003. **32**(6): p. 902-9.
26. Alex, R., et al., *Self-poisoning with pesticides in India.* Br J Psychiatry, 2007. **190**: p. 274-5.
27. Adinkrah, M., *Patterns of female suicidal behavior in Ghana.* Psychol Rep, 2011. **109**(2): p. 649-62.
28. Raleigh, V.S., *Suicide patterns and trends in people of Indian subcontinent and Caribbean origin in England and Wales.* Ethn Health, 1996. **1**(1): p. 55-63.
29. de Leo, D. and T. Heller, *Social modeling in the transmission of suicidality.* Crisis, 2008. **29**(1): p. 11-9.
30. Redaniel, M.T., M.A. Lebanan-Dalida, and D. Gunnell, *Suicide in the Philippines: time trend analysis (1974-2005) and literature review.* BMC Public Health, 2011. **11**: p. 536.
31. Wong, S.P. and M.R. Phillips, *Nonfatal suicidal behavior among Chinese women who have been physically abused by their male intimate partners.* Suicide Life Threat Behav, 2009. **39**(6): p. 648-58.
32. Durkheim, E., *Suicide: A Study in Sociology*1951, Glencoe, Ill.: The Free Press.
33. Durkheim, E., *De la division du travail social. 7th ed.*1960, Paris, France: Presses Universitaires de France.
34. Braswell, H. and H.I. Kushner, *Suicide, social integration, and masculinity in the U.S. military.* Soc Sci Med, 2012. **74**(4): p. 530-6.
35. Blake, J.A., *Death by hand grenade: altruistic suicide in combat.* Suicide Life Threat Behav, 1978. **8**(1): p. 46-59.
36. Vijayakumar, L., *Altruistic suicide in India.* Arch Suicide Res, 2004. **8**(1): p. 73-80.
37. Lane, R., *Violent death in the city: Suicide, accident, and murder in nineteenth-century Philadelphia.* 1979, Cambridge, MA: Harvard University Press.
38. Kawachi, I. and B.P. Kennedy, *Health and social cohesion: why care about income inequality?* BMJ, 1997. **314**(7086): p. 1037-40.
39. Kawachi, I., et al., *Social capital, income inequality, and mortality.* Am J Public Health, 1997. **87**(9): p. 1491-8.
40. Berkman, L.F., et al., *From social integration to health: Durkheim in the new millennium.* Soc Sci Med, 2000. **51**(6): p. 843-57.
41. Kushner, H.I. and C.E. Sterk, *The limits of social capital: Durkheim, suicide, and social cohesion.* Am J Public Health, 2005. **95**(7): p. 1139-43.
42. Phillips, M.R., H. Liu, and Y. Zhang, *Suicide and social change in China.* Cult Med Psychiatry, 1999. **23**(1): p. 25-50.
43. Young, T.J., *Poverty, suicide, and homicide among Native Americans.* Psychol Rep, 1990. **67**(3 Pt 2): p. 1153-4.
44. Young, T.J., *Suicide and homicide among Native Americans: anomie or social learning?* Psychol Rep, 1991. **68**(3 Pt 2): p. 1137-8.
45. Young, T.J. and L.A. French, *Suicide and social status among Native Americans.* Psychol Rep, 1993. **73**(2): p. 461-2.
46. Patel, V. and A. Kleinman, *Poverty and common mental disorders in developing countries.* Bull World Health Organ, 2003. **81**(8): p. 609-15.

47. Patel, V., M. Rodrigues, and N. DeSouza, *Gender, poverty, and postnatal depression: a study of mothers in Goa, India.* Am J Psychiatry, 2002. **159**(1): p. 43-7.
48. Stack, S. and A.J. Kposowa, *Religion and suicide acceptability: a cross-national analysis.* Journal for the scientific study of religion, 2011. **50**(2): p. 289-306.
49. Ritter, K., W. Zitterl, and T. Stompe, *[Religion and suicide - part 2: confessions, religiousness, secularisation and national suicide rates].* Neuropsychiatrie : Klinik, Diagnostik, Therapie und Rehabilitation : Organ der Gesellschaft Osterreichischer Nervenarzte und Psychiater, 2011. **25**(3): p. 127-34.
50. Stompe, T. and K. Ritter, *[Religion and suicide - part 1: the attitudes of religions towards suicide].* Neuropsychiatrie : Klinik, Diagnostik, Therapie und Rehabilitation : Organ der Gesellschaft Osterreichischer Nervenarzte und Psychiater, 2011. **25**(3): p. 118-26.
51. Rasic, D., S. Kisely, and D.B. Langille, *Protective associations of importance of religion and frequency of service attendance with depression risk, suicidal behaviours and substance use in adolescents in Nova Scotia, Canada.* Journal of affective disorders, 2011. **132**(3): p. 389-95.
52. Khan, M.M. and H. Reza, *Gender differences in nonfatal suicidal behavior in Pakistan: significance of sociocultural factors.* Suicide Life Threat Behav, 1998. **28**(1): p. 62-8.
53. Adinkrah, M., *Epidemiologic characteristics of suicidal behavior in contemporary Ghana.* Crisis, 2011. **32**(1): p. 31-6.
54. Hjelmeland, H., et al., *Self-reported suicidal behavior and attitudes toward suicide and suicide prevention among psychology students in Ghana, Uganda, and Norway.* Crisis, 2008. **29**(1): p. 20-31.
55. Lester, D. and A. Akande, *Attitudes about suicide among the Yoruba of Nigeria.* J Soc Psychol, 1994. **134**(6): p. 851-3.
56. Peltzer, K., V.I. Cherian, and L. Cherian, *Attitudes toward suicide among South African secondary school pupils.* Psychol Rep, 1998. **83**(3 Pt 2): p. 1259-65.
57. Eshun, S., *Sociocultural determinants of suicide ideation: a comparison between American and Ghanaian college samples.* Suicide Life Threat Behav, 2003. **33**(2): p. 165-71.
58. Patel, V., et al., *Lay health worker led intervention for depressive and anxiety disorders in India: impact on clinical and disability outcomes over 12 months.* Br J Psychiatry, 2011. **199**(6): p. 459-66.
59. Patel, V., et al., *Effectiveness of an intervention led by lay health counsellors for depressive and anxiety disorders in primary care in Goa, India (MANAS): a cluster randomised controlled trial.* Lancet, 2010. **376**(9758): p. 2086-95.
60. Balaji, M., et al., *The development of a lay health worker delivered collaborative community based intervention for people with schizophrenia in India.* BMC Health Serv Res, 2012. **12**(1): p. 42.
61. Balaji, M., et al., *The acceptability, feasibility, and effectiveness of a population-based intervention to promote youth health: an exploratory study in Goa, India.* J Adolesc Health, 2011. **48**(5): p. 453-60.
62. Mann, J.J., et al., *Suicide prevention strategies: a systematic review.* JAMA, 2005. **294**(16): p. 2064-74.
63. Bertolote, J.M., et al., *Repetition of suicide attempts: data from emergency care settings in five culturally different low- and middle-income countries participating in the WHO SUPRE-MISS Study.* Crisis, 2010. **31**(4): p. 194-201.

64. Fleischmann, A., et al., *Effectiveness of brief intervention and contact for suicide attempters: a randomized controlled trial in five countries.* Bull World Health Organ, 2008. **86**(9): p. 703-9.
65. Mukherjee, J.S. and F.E. Eustache, *Community health workers as a cornerstone for integrating HIV and primary healthcare.* AIDS Care, 2007. **19 Suppl 1**: p. S73-82.
66. Unit, C.C.M., *Social Resilience and State Fragility in Haiti: A Country Social Analysis*, 2006, World Bank.
67. D'informatique, I.H.d.S.e., *Population Totale, Population de 18 Ans et Plus Menages et Densites Estimes en 2009.*, P.-a.-P.I.H.d.S.e. D'informatique, Editor 2009.
68. *World Bank Gini Index*. 2001 [cited February 29, 2012; Available from: http://data.worldbank.org/country/haiti.
69. Verner, D., Edset, W., *Social Resilience and State Fragility in Haiti.*2007, Washington DC: World Bank.
70. Desrosiers, A. and S. St Fleurose, *Treating Haitian patients: key cultural aspects.* Am J Psychother, 2002. **56**(4): p. 508-21.
71. Trouillot, M.-R., *Haiti, State Against Nation: The Origins and Legacy of Duvalierism.*1990, New York: Montly Review Press.
72. Dauphin, S., *La famille élargie comme source de soutien aux familles haïtiennes en difficulté: Perception des intervenants.* . Défi Jeunesse, 2002. **14**(3): p. 17-26.
73. N'Zengou-Tayo, M.J., *Fanm se poto mitan: Haitian woman is the pillar of society.* Fem Review, Summer, 1998. **59**: p. 118-142.
74. Miller, N.L., *Haitian ethnomedical systems and biomedical practitioners: directions for clinicians.* J Transcult Nurs, 2000. **11**(3): p. 204-11.
75. Bell, B., *Walking on fire: Haitian women's stories of survival and resistance.*2001, Ithiaca, New York: Cornell University Press.
76. Hurbon, L., *Religions et lien social: l'Église et l'État moderne en Haïti.* 2004, Paris, France: Éditions du Cerf.
77. Hurbon, L., *La conjunction des imaginaries européen et africain autour du Vodou.* 2008, Geneva: Infolio, Musée d'ethnographie de Genève.
78. Brodwin, P.E., *Guardian angels and dirty spirits: The moral basis of healing power in rural Haiti.* , in *Anthropological Approaches to the Study of Ethnomedicine*, M. Nichter, Editor 1992, Gordon and Breach: Langhorne, PA.
79. Métraux, A., *Le Vaudou Haïtien.* 1958, Paris, France: Gallimard. .
80. Gopaul-McNicol, S., Benjamin-Dartigue, D., Francois, M., *Working with Haitian Canadian Families.* International Journal for the Advancement of Counselling, 1998. **20**: p. 231-242.
81. Brodwin, P.E., *Medicine and morality in Haiti: The contest for healing power*1996, New York, New York: Cambridge University Press.
82. Pierre, A., et al., *[Culture and mental health in Haiti : a literature review].* Sante Ment Que, 2010. **35**(1): p. 13-47.
83. Sterlin, C., *Pour une approche interculturelle du concept de santé.* Ruptures, revue transdisciplinaire en santé, 2006. **11**(1): p. 112-121.
84. Azaunce, M., *Is it schizophrenia or spirit possession?* Journal of Social Distress and the Homeless, 1995. **4**: p. 225-263.
85. Bolton, P., et al., *The mental health and psychosocial effects of organized violence: A qualitative study in northern Haiti.* Transcultural Psychiatry, 2012.

86. Zanotti, L., *Cacophonies of aid, failed state building and NGOs in Haiti: setting the stage for disaster, envisioning the future.* Third World Q, 2010. **31**(5): p. 755-71.
87. Organization, W.H., *Rapport d'évaluation du système de Santé mentale en Haïti à l'aide de l'instrument l'évaluation conçu par l'Organisation Mondiale de la Santé mentale (OMS) Pour les systèmes de Santé Mentale (IESM-OMS)*, 2011, World Health Organization.
88. Douyon, E., *La transe vaudouesque. Un syndrome de déviance psychoculturelle.*, 1969, université de Montréal.
89. *La mort par pays: Haiti*, in *Encyclopedie sur la mort*.
90. Crime, U.N.O.o.D.a., *Global Study on Homicide: Trends, Contexts, Data*, 2011, United Nations Office on Drugs and Crime
91. WHO, *Suicide rates by gender, Dominican Republic, 1960-2005*, 2005, World Health Organization.
92. Stack, S., *Suicide: A 15-year review of the sociological literature part I: Cultural and economic factors.* Suicide and Life-Threatening Behavior, 2000. **30**(2): p. 145-162.
93. Wagenaar, B., Hagaman, A., Kaiser, B., and Kohrt, B. , *In review. Depression, Suicidal Ideation, and Associated Factors in rural Haiti. .*
94. Taylor, R.J., L.M. Chatters, and S. Joe, *Religious involvement and suicidal behavior among African Americans and Black Caribbeans.* J Nerv Ment Dis, 2011. **199**(7): p. 478-86.
95. Hutchinson, G., et al., *High rates of paraquat-induced suicide in southern Trinidad.* Suicide Life Threat Behav, 1999. **29**(2): p. 186-91.
96. Hutchinson, G., C. Bruce, and V. Simmons, *Increasing incidence of admissions to a general hospital for deliberate self-harm in Trinidad.* West Indian Med J, 2008. **57**(4): p. 346-51.
97. Copeland, A.R., *Suicide among nonwhites. The Metro Dade County experience, 1982-1986.* Am J Forensic Med Pathol, 1989. **10**(1): p. 10-3.
98. Nishio, A., et al., *Influence on the suicide rate two years after a devastating disaster: a report from the 1995 Great Hanshin-Awaji Earthquake.* Psychiatry Clin Neurosci, 2009. **63**(2): p. 247-50.
99. Gordon, K.H., et al., *The impact of the 2009 Red River Flood on interpersonal risk factors for suicide.* Crisis, 2011. **32**(1): p. 52-5.
100. Mezuk, B., et al., *The influence of a major disaster on suicide risk in the population.* J Trauma Stress, 2009. **22**(6): p. 481-8.
101. Kessler, R.C., et al., *Trends in mental illness and suicidality after Hurricane Katrina.* Mol Psychiatry, 2008. **13**(4): p. 374-84.
102. Phillips, M.R., et al., *Risk factors for suicide in China: a national case-control psychological autopsy study.* Lancet, 2002. **360**(9347): p. 1728-36.
103. Mayer, P., *Development, gender equality, and suicide rates.* Psychol Rep, 2000. **87**(2): p. 367-72.
104. Mayer, P. and T. Ziaian, *Suicide, gender, and age variations in India. Are women in indian society protected from suicide?* Crisis, 2002. **23**(3): p. 98-103.
105. Li, X.Y., et al., *[Current attitudes and knowledge about suicide in community members: a qualitative study].* Zhonghua Liu Xing Bing Xue Za Zhi, 2004. **25**(4): p. 296-301.
106. Lee, S., et al., *Attitudes toward suicide among Chinese people in Hong Kong.* Suicide Life Threat Behav, 2007. **37**(5): p. 565-75.
107. Bolton, P., et al., *The mental health and psychosocial effects of organized violence: A qualitative study in northern Haiti.* Transcult Psychiatry, 2012.

108. Gage, A.J. and P.L. Hutchinson, *Power, control, and intimate partner sexual violence in Haiti.* Arch Sex Behav, 2006. **35**(1): p. 11-24.
109. Small, M.J., et al., *Intimate partner and nonpartner violence against pregnant women in rural Haiti.* Int J Gynaecol Obstet, 2008. **102**(3): p. 226-31.
110. Couture, M.C., et al., *Violence against intimate partners and associations with inconsistent condom use among clients of female sex workers in Haiti.* Public Health Rep, 2010. **125**(6): p. 896-902.
111. Kaiser, B., Kohrt, B., Keys, H., Khoury, N., & Brewster, A. , *In Press. Assessing mental health in rural Haiti: Comparing local instrument development and transcultural translation strategies for community screening.* Transcult Psychiatry.
112. Robins, E., et al., *The communication of suicidal intent: a study of 134 consecutive cases of successful (completed) suicide.* Am J Psychiatry, 1959. **115**(8): p. 724-33.
113. Eskin, M., *A cross-cultural investigation of the communication of suicidal intent in Swedish and Turkish adolescents.* Scand J Psychol, 2003. **44**(1): p. 1-6.
114. Zhou, X.M. and S.H. Jia, *Suicidal communication signifies suicidal intent in Chinese completed suicides.* Soc Psychiatry Psychiatr Epidemiol, 2012.
115. Corbin, J. and A. Strauss, *Basics of qualitative research : techniques and procedures for developing grounded theory.* 1942: Sage Publications.
116. VERBI, *MAXQDA: software for qualitative data analysis*, 1989-2010, Sozialforschung GmbH: Berlin-Marburg-Amöneburg, Germany.
117. Kremer, H., et al., *The decision to forgo antiretroviral therapy in people living with HIV compliance as paternalism or partnership?* Eur J Med Res, 2004. **9**(2): p. 61-70.
118. Theuring, S., et al., *Partner involvement in perinatal care and PMTCT services in Mbeya Region, Tanzania: the providers' perspective.* AIDS Care, 2010. **22**(12): p. 1562-8.
119. Renberg, E.S. and L. Jacobsson, *Development of a questionnaire on attitudes towards suicide (ATTS) and its application in a Swedish population.* Suicide Life Threat Behav, 2003. **33**(1): p. 52-64.
120. Singh, B.K., J.S. Williams, and B.J. Ryther, *Public approval of suicide: a situational analysis.* Suicide Life Threat Behav, 1986. **16**(4): p. 409-18.
121. Bagley, C. and R. Ramsey, *Attitudes towards suicide, religious values, and suicidal behaviour. Evidence from a community survey.* , in *Suicide and its prevention. The role of attitude and imitation*, R.F.W. Diekstra, et al., Editors. 1989, Leiden: E. J. Brill. p. 78-90.
122. Gibb, S.J., A.L. Beautrais, and L.J. Surgenor, *Health-care staff attitudes towards self-harm patients.* Aust N Z J Psychiatry, 2010. **44**(8): p. 713-20.
123. Patel, V., R. Araya, and P. Bolton, *Treating depression in the developing world.* Trop Med Int Health, 2004. **9**(5): p. 539-41.
124. Chisholm, D., et al., *Scale up services for mental disorders: a call for action.* Lancet, 2007. **370**(9594): p. 1241-52.
125. Patel, V.H., et al., *Improving the outcomes of primary care attenders with common mental disorders in developing countries: a cluster randomized controlled trial of a collaborative stepped care intervention in Goa, India.* Trials, 2008. **9**: p. 4.
126. Chatterjee, S., et al., *Integrating evidence-based treatments for common mental disorders in routine primary care: feasibility and acceptability of the MANAS intervention in Goa, India.* World Psychiatry, 2008. **7**(1): p. 39-46.
127. Nock, M.K., et al., *Cross-national analysis of the associations among mental disorders and suicidal behavior: findings from the WHO World Mental Health Surveys.* PLoS Med, 2009. **6**(8): p. e1000123.

128. Sheikholeslami, H., C. Kani, and A. Ziaee, *Attempted suicide among Iranian population.* Suicide Life Threat Behav, 2008. **38**(4): p. 456-66.
129. Phillips, W.R. and T.L. Little, *Continuity of care and poisoning prevention education.* Patient Couns Health Educ, 1980. **2**(4): p. 170-3.
130. *Paraquat poisoning in the Caribbean.* Bull Pan Am Health Organ, 1986. **20**(4): p. 406-9.
131. Eddleston, M. and M.R. Phillips, *Self poisoning with pesticides.* BMJ, 2004. **328**(7430): p. 42-4.
132. Gunnell, D., et al., *The global distribution of fatal pesticide self-poisoning: systematic review.* BMC Public Health, 2007. **7**: p. 357.
133. Agnew, R., *The approval of suicide: a social-psychological model.* Suicide Life Threat Behav, 1998. **28**(2): p. 205-25.
134. Eskin, M., *The effects of religious versus secular education on suicide ideation and suicidal attitudes in adolescents in Turkey.* Soc Psychiatry Psychiatr Epidemiol, 2004. **39**(7): p. 536-42.
135. Neeleman, J., *Regional suicide rates in the Netherlands: does religion still play a role?* Int J Epidemiol, 1998. **27**(3): p. 466-72.
136. Joe, S., D. Romer, and P.E. Jamieson, *Suicide acceptability is related to suicide planning in U.S. adolescents and young adults.* Suicide Life Threat Behav, 2007. **37**(2): p. 165-78.
137. Murray, L.K., et al., *Building capacity in mental health interventions in low resource countries: an apprenticeship model for training local providers.* Int J Ment Health Syst, 2011. **5**(1): p. 30.
138. Summerfield, D., *How scientifically valid is the knowledge base of global mental health?* BMJ, 2008. **336**(7651): p. 992-4.