Journal of Affective Disorders 225 (2018) 413–421

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

Suicidality and associated risk factors in outpatients attending a general medical facility in rural Kenya

L. Ongeri[a,c,*], C.E. McCulloch[b,c], T.C. Neylan[c,g], E. Bukusi[c,d], S.B. Macfarlane[c,e], C. Othieno[c,f], A.K. Ngugi[c,g], S.M. Meffert[c,g]

[a] Centre for Clinical Research, Kenya Medical Research Institute, Nairobi, Kenya
[b] Department of Epidemiology and Biostatistics, University of California, San Francisco, USA
[c] Centre for Microbiology Research, Kenya Medical Research Institute, Nairobi, Kenya
[d] Global Health Sciences, University of California San Francisco, California, USA
[e] Department of Psychiatry, University of Nairobi, Kenya
[f] Centre for Population Health Sciences, Faculty of Health Sciences-East Africa, Aga Khan University, Nairobi, Kenya
[g] Department of Psychiatry, University of California San Francisco (UCSF), San Francisco, USA

ARTICLE INFO

Keywords:
Suicide
Suicidal ideation
Depression
Posttraumatic stress disorder (PTSD)
Global mental health
Sub-Saharan Africa

ABSTRACT

Background: Low-and-Middle-Income-Countries (LMICs) account for 75% of global suicides. While primary care populations in high-income countries (HIC) typically have higher prevalence of suicidal behavior relative to general populations, few studies have explored suicidal behavior among general medical outpatients in LMICs. This study addresses the research gap by characterizing potential risk factors for suicidal ideation in a large general medical outpatient setting in rural Kenya.

Methods: A cross-sectional study of adult general medical outpatients attending a rural sub-county hospital in Kaloleni, Kenya. Primary outcomes included major depressive disorder (MDD), posttraumatic stress disorder (PTSD) and suicidal behavior measured by the Mini International Neuropsychiatric Interview (MINI 5.0). We use binary logistic regression to model suicidality, mental disorders, intimate partner violence, and lifetime abuse.

Results: 394 outpatients completed the assessment. The prevalence of SI over the past month was 20%. 18% of those with suicidal ideation over the past month also attempted suicide in the past month. Participants who met criteria for MDD (suicidality item removed) were 19 times [CI: 4.56, 79.05] more likely to report suicidal ideation compared to those without MDD (adjusted odds ratio 12.15 [CI: 2.66, 55.49]).

Limitations: This was a cross sectional study design with convenience sampling and hence vulnerable to selection and recall bias.

Conclusion: The prevalence of SI and its strong association with actual suicide attempt in this population, make an urgent public health case for intervention. These data identify MDD as a highly significant correlate of SI.

1. Introduction

Globally, suicide is the fifteenth leading cause of death and claims 800,000 lives each year. 75% of all suicides occur in low-and middle-income countries (LMICs), and the majority are young adults (World Health Organization, 2014). Suicide is a focus of the World Health Organization (WHO), with a goal of 10% reduction by 2020 (World Health Organization, 2014).

Across diverse populations, the risk of suicide is significantly higher among individuals with poor physical and/or mental health, compared with their healthier counterparts (Scott et al., 2010; Whittier et al., 2016). Perhaps reflecting this fact is the higher prevalence of suicidal behavior, defined as suicide ideation, plan and/or attempt, among primary care patient populations relative to general populations (Ani et al., 2008; Berghöfer et al., 2014). Studies of populations in sub-Saharan Africa also find that the prevalence of suicidal behavior is higher among primary care patients compared with general populations (Fekadu et al., 2016). Nearly half of all suicide completers have contact with their primary care provider within one month of committing suicide and 75% have contact in the year prior (Luoma, Martin, and Pearson, 2002)—presenting an enormous opportunity for prevention.

In both HICs and sub-Saharan Africa, suicidal ideation is now understood to be a key step in the progression to suicide attempt and hence a target for early intervention to prevent suicide (Fekadu et al.,

* Corresponding author at: Centre for Clinical Research, Kenya Medical Research Institute, Nairobi, Kenya.
E-mail address: linongeri@gmail.com (L. Ongeri).

http://dx.doi.org/10.1016/j.jad.2017.08.059
Received 31 May 2017; Received in revised form 10 August 2017; Accepted 20 August 2017
Available online 31 August 2017

2016; Joe et al., 2008; Klonsky et al., 2016). While the rate of transition from suicidal ideation to suicide attempt is thought to be relatively low in HICs (e.g., 7.4% over 2 years), (Have et al., 2009) among sub-Saharan African patients, the transition from suicidal ideation to suicide attempt is higher: 30–50% of patients with suicidal ideation attempt suicide in the subsequent year (Fekadu et al., 2016; Joe et al., 2008).

Despite the fact that LMICs account for the vast majority of global suicides, and the strong association between suicidal ideation and suicide attempt in sub-Saharan Africa, few studies have focused on risk factors for suicidal ideation. There have been several studies of urban sub-Saharan African populations that characterize the demographic, mental and physical health parameters of suicidal behavior, symptoms or risk in general outpatient settings (Aillon et al., 2013; Fekadu et al., 2016; Whittier et al., 2016), but these studies do not center on suicidal ideation, its predictors or address the large rural populations that make up the majority of those affected by mental disorders in many LMICs. This study aims to address this critical research gap by characterizing potential risk factors for suicidal ideation in a large primary care setting in rural Kenya.

The Kaloleni Sub-County of Kenya (population 298,287) is a rural coastal region near Mombasa with some of the poorest health indicators in Kenya. Kaloleni has high rates of exposure to traumatic experiences, including high levels of intimate partner violence (39.4%), alcohol abuse (17.6%), deaths related to HIV infection (6% prevalence) and extreme poverty (Kenya Inter Agency Rapid Assessment ((KIRA), 2014), 2014; Kenya National Bureau of Statistics, 2005). The poverty rate in Kaloleni is at 70.8% compared with a national rate of 45.9%; and the county ranks 39 out of 47 counties in wealth (Kenya, 2013). Kaloleni is the focus of the Integrated Primary Health Care (IPHC) Programme. Launched in 2011, the IPHC is a public-private collaboration between Aga Khan University East Africa (AKU-EA), the Kenyan Ministry of Health and the University of California San Francisco (UCSF). IPHC's objective is to improve access to quality medical care in Kaloleni, including mental health care for common mental disorders and it is for this reason that we harnessed its resources.

Public Sector Healthcare Delivery in Kenya (Table 1). Kenya's health service delivery is organized around a 4 tiered health system. These include: community, primary care, county referral and national referral services. The central government is responsible for health care provision in the national referral hospitals. The other 3 tiers fall under the county governments (Ministry of Health, 2012; Kenya Healthcare Federation, 2016). Dispensaries (tier 2) are the most numerous type of healthcare facility and are designed to be the first point of contact for patients. They are staffed by nurses and provide preventative healthcare and treatment for simple conditions, such as cold, flu and uncomplicated malaria. Conditions that cannot be treated at dispensaries are referred to health centers (tier 2), which are staffed by clinical officers (approximately 2 years of clinical training) or nurses. Health centers serve populations of about 80,000 people and provide more comprehensive outpatient primary care than dispensaries, but continue to focus primarily on preventative care. Conditions that cannot be treated at health centers are referred to the county referral hospitals (tier 3), the staff for which typically includes physicians. As opposed to the preventative focus of tiers 1 and 2 county referral hospitals can address complicated medical conditions and provide more extensive surgical services. County referral hospitals are the first level at which inpatient beds are available and have a varying bed capacity. The final healthcare referral point is tier 4, which includes national tertiary referral hospitals, staffed by physicians and providing a wide range of highly specialized inpatient and outpatient services, including psychiatric care.

While Kenya's referral protocols guide patients to higher healthcare tiers as needed, many individuals elect to go to their nearest health facility, regardless of its tier. For example, 90% of the patients seen at Mariakani sub-county hospital (tier 3) in Kaloleni are local residents who self-refer for healthcare, rather than being referred by tier 1 or 2 facilities (Hospital, 2015). Given that sub-county hospitals are widely dispersed across Kenya and provide access to physicians and specialty care, they are the ideal setting in which to develop mental health care services. We assessed mental health care needs study of out-patients served by the general medical outpatient clinics of Mariakani Hospital. We included measures of suicide, depression, trauma exposure, post-traumatic-stress disorder (PTSD), substance abuse and perceived physical health.

2. Methods

2.1. Study Site

Mariakani Sub-county hospital serves a catchment of over 300,000 people with a bed capacity of 68. No formal mental health care services are currently provided. The medical staff includes 7 doctors, 40 nurses and 11 clinical officers. The number of outpatients seen per day in the general medical outpatient clinic ranges from 80 to 150 per day.

As mentioned above, the vast majority of the of the clinic's patients (90%) are local self-referrals who have not seen any other provider for their chief complaint (Hospital, 2015). Like other sub-county hospital general medical outpatient clinics in Kenya, Mariakani outpatient clinic provides urgent and emergency healthcare. Emergencies and urgent cases are handled in the general outpatient clinic. Many of the patients attending Marikani general medical outpatient clinic present with acute healthcare needs including severe respiratory tract infections, malaria and serious injuries. Also unlike high income country counterparts, only a very small group of patients present for scheduled appointments for preventative or follow-up care.

2.2. Target population

Outpatients from the general medical care outpatient clinic aged 18 years and above at the Mariakani Sub-county hospital.

Table 1
Organization of health service delivery around a four tiered health system in Kenya.

Care Tier	Care Type	Core Services Provided	Facility Type	Provider Type
1	Community care	Facilitate community diagnosis, management & referral.	Household and community based outreach care.	Community health workers.
2	Primary Care: Dispensaries, clinics and health centers.	Basic outpatient diagnostic, medical, surgical & rehabilitative services.	1–2 exam rooms,	Nurses and clinical officers
3	Secondary Care Referral: Primary and secondary care hospitals.	Comprehensive in patient diagnostic, medical, surgical and rehabilitative care, including reproductive health services	50 exam rooms and varying number of inpatient beds, 24 h access	Nurses, clinical officers and physicians
4	Tertiary Care Referral: National referral hospitals and specialized hospitals.	Highly specialized health care	Typically 200 exam rooms and 500 inpatient beds, 24 h access	Nurses, clinical officers and physicians

Note: Clinical officers (Cos) provide a great deal of healthcare in Kenya. They receive approximately 3 years of clinical training – more than nurses and less than physicians and they function between nurses and doctors with regards to the complexity of the cases that they manage.