2017

Suicide Behavior among Guyanese Orphans: Identification of suicide risk and protective factors in a Low-Middle-Income-Country

Ellen-ge Denton
CUNY College of Staten Island

George Musa
Columbia University

Christina Hoven
Columbia University

Suicide behaviour among Guyanese orphans: identification of suicide risk and protective factors in a low- to middle-income country

Ellen-ge D. Denton[1]*, George J. Musa[2], and Christina Hoven[2]

[1]*Department of Psychology, City University of New York College of Staten Island, Staten Island, USA*
[2]*Global Psychiatric Epidemiology Group, Department of Psychiatry, Columbia University–New York State Psychiatric Institute, New York, USA*
*Corresponding author email: ellenge.denton@csi.cuny.edu

Objective: **Suicide is the leading cause of death among youth in Guyana, a low- and middle-income country (LMIC), which globally ranks first in female adolescent suicides over the last decade. Worldwide, Guyana has experienced the largest increase in youth suicide, despite focused public health efforts to reduce suicide. Further, youth in Guyana, who are clients of the orphanage system and have faced early childhood trauma, may have an additive risk for suicide. Guided by an ideation-to-action theoretical framework for suicide prevention, the goal of the proposed research study is to describe and identify risk and protective factor correlates of youth suicidal behaviour among those at highest risk for suicide – orphans who reside in a LMIC institutional setting.** *Methods:* **In a preliminary sample of 25 orphan youth, one licensed psychologist and two social workers administered the DSM-5 Level 1 Cross-Cutting Symptom Measure and Behavioural Assessment Schedule for Children, 2nd Edition (BASC-2) during a semi-structured interview.** *Results:* **Nine of the 25 (36%) orphans reported a previous suicide attempt. Youth who endorsed suicidal behaviour had clinically elevated interpersonal relations scale scores when compared to youth who did not.** *Conclusions:* **Interpersonal skills may be protective for youth at highest risk for suicide.**

Introduction

The burden of suicide remains a global public health concern, especially for limited resource countries (CDC, 2014; Hagaman, 2013; WHO, 2014). Low and middle-income countries (LMICs) are estimated to account for 75% of all suicides worldwide (WHO, 2014). However, scientific investigation of suicidal behaviour in LMICs include unique challenges. These challenges include high levels of exposure to community discrimination or stigmatisation, limited therapeutic resources post-assessment, and potentially misleading information arising from the use of Western assessment tools due to misguided interpretations of cultural and contextual specific responses. As a result, the scientific literature has a narrow, underrepresented research base for understanding and developing suicide prevention/intervention models (Hijazi, 2010; Lopez-Castroman et al., 2015). Further, LMIC populations at greatest risk for suicide usually lack both internal resources and external investors who can prioritise suicide research and thus contribute to a global understanding of suicide and/or suicide prevention.

Guyana, a LMIC, is located in the northeast area of South America. With a relatively small population (World Bank, 2017), Guyana has consistently ranked among the top ten nations for the number of suicide deaths for over a decade (Nock et al., 2008). Importantly, Guyana ranks first in female adolescent suicides (ages 10–19) worldwide (Kolves & DeLeo, 2014), and ranks sixth (ages 10–14) and fourth (ages 15–19) among male suicides (Kolves & DeLeo, 2014). Low economic resources, increased access to pesticides, including exposure to other self-poisoning means

(Eddelston & Phillips, 2004; Gunnell et al., 2003; Williams-Johnson, 2012), and contagion effects comprise some of the unique social and environmental correlates to suicide risk in LMICs such as Guyana (Brent et al., 1992; Chotai, 2005; Kõlves & De Leo, 2016; Swanson & Colman, 2013). The issue is further complicated by the lack of information regarding individual suicide risk factors; such as childhood traumas (Bertolote & Fleischmann, 2005), maladaptive coping with stressors (Dervic et al., 2008), separation from parents (Nock et al., 2013), and interpersonal conflicts (Rudatsikira, 2007). Therefore, there is great need to investigate and document the individual risk factors to suicidal behaviour among youth located in LMIC's in general, and specifically in Guyana.

To identify the individual risk factors for suicide in Guyana, we investigated youth considered to be at highest risk for suicide – that is, institutionalised youth. While we do not have any data on suicide prevalence among institutionalised youth in Guyana, we do know that suicide is the leading cause of death among youth who are institutionalised (Gallagher & Dobrin, 2006a, 2006b; Madsen et al., 2011; Bhatta et al., 2014,). In addition, institutionalised youth who are separated from their parents (experienced trauma; Nock, 2008), enrolled in child welfare programs (such as Guyana Child Protective Services; Dervic et al., 2008), and have increased exposures to suicide (WHO, 2014), are at an increased risk for suicide when compared to their counterparts. We also know that suicidal behaviours have been a risk for suicide fatality for many decades (Owens et al., 2002). Thus, given the early-life presence of suicide risk factors among institutionalised youth, we focus on a special, orphaned, population of Guyanese youth to identify and describe the risk factors for youth suicidal ideation and behaviour (Bolger, Downey, Walker, & Steininger, 1989; Roy et al., 2004). We aim to elucidate the proximal and individual risk factors of suicidal ideation and behaviour among youth with increased exposures to suicide, and to explore non-fatal suicide thoughts and previous attempts among a LMIC youth population. Specifically, our goal is to identify and describe risk factors related to suicidal ideation and attempt among Guyanese youth.

Methods

The study[1] used both a purposive and convenience sampling design. Twenty-five youth, from four different orphanages, were selected by orphanage administration to be clinically evaluated. Data were collected from the clinical evaluation and consultation service in Georgetown, Guyana (April 2014). Only youth between the ages of six and 21, currently residing in Child Protection Care, and without any physical or cognitive impairment were, selected for clinical evaluation and interview. All of the youth identified as eligible were included in the study. Orphanage directors consented to orphan interviews and each orphan provided informed assent. The PI (Denton) obtained IRB approval for this investigation from City University of New York, College of Staten Island.

One licensed psychologist and two social workers administered the DSM-5 Level 1 Cross-Cutting Symptom Measure and Behavioural Assessment Schedule for Children 2nd Edition (BASC-2), during a semi-structured interview. Clinical staff were trained to administer assessment tools during three 90-minute sessions. Each interview was approximately 45-60 minutes. Follow-up clinical interviews entailed crisis intervention, safety plan implementation, and notification of suicidal risk to identified authorities.

BASC Child Version (BASC-C) evaluates maladjustment and characteristics related to impaired functioning in the child's home, school, community, or peer relationships. Four of the youth did not complete all BASC-C item questions and were excluded from result summaries of this scale ($n = 21$). BASC clinical and subclinical scales are listed in Table 1. Adaptive scales include Relation with Parents, Interpersonal Relations, Self-esteem, and Self-reliance. The BASC-C, 139-item version, was administered to youth aged six to eleven years. On a scale of 'never', 'sometimes', 'often', and 'almost always' (items 1-51 required a 'true' or 'false' response), youth were asked to respond to personalised statements. Similarly, the BASC-A evaluates youth aged twelve to 21, yielding the same scales. The BASC-A is comprised of 176 items. In addition to named scales on the BASC-C, the BASC-A includes Sensation Seeking and Somatisation subscales.

The DSM-5 Level 1 Cross-Cutting Symptom Measure assessed mental health domains important to psychiatric diagnosis and was administered to youth ages eleven to 21 ($n = 17$). Two of the youth

Table 1: Demographics and study variables

| Variables		Average (N = 25)	Min–Max
Age		12.7 ± 4.2	5–21
Male		13 (52%)	
Suicidal ideation & previous attempts: α = 0.63		9 (36%)	(yes/no)
DSM-V		**Average (N = 15)**	**Min–Max**
Somatic symptoms	α = 0.15, 2 items	1.3 ± 1.1	0–4
Sleep problems	1 item	1.6 ± 1.8	0–4
Inattention	1 item	1.6 ± 1.7	0–4
Depression	α = 0.40, 2 items	1.6 ± 1.4	0–4
Anger and irritability	α = 0.77, 2 items	1.9 ± 1.4	0–4
Mania	α = 0.60, 2 items	1.7 ± 1.5	0–4
Anxiety	α = 0.81, 3 items	1.6 ± 1.5	0–4
Psychosis	α = –0.04, not reliable	1.1 ± 1.2	0–4
Repetitive thoughts & behaviours	α = 0.77, 4 items	1.4 ± 1.3	0–4
Substance use	α= 0.16, 4 items	6 (40.0)	(yes/no)
BASC-A ages 12–21		**Average (N = 15)**	**Min–Max (Sample Min–Max)**
Atypicality	α = 0.78, 9 items	75.7 ± 16.3	20–120 (50–107)
Locus of control	α = 0.40, 9 items	68.2 ± 6.6	20–120 (62–83)
Social stress	α = 0.82, 10 items	72.1. ± 15.0	20–120 (45–95)
Anxiety	α = 0.83, 13 items	66.5 ± 12.3	20–120 (40–83)
Depression	α = 0.61, 12 items	72.4 ± 10.1	20–120 (55–89)
Sense of inadequacy	α = 0.67, 10 items	69.5 ± 11.2	20–120 (49–89)
Attention problems	α = 0.71, 9 items	59.7 ± 5.5	20–120 (47–68)
Hyperactivity	α = 0.83, 7 items	66.1 ± 16.8	20–120 (39–97)
Relations with parents	α = 0.79, 10 items	50.1 ± 9.5	10–90 (30–67)
Interpersonal relations	α = 0.74, 7 items	35.1 ± 8.7	10–90 (22–48)
Self-esteem	α = 0.41, 8 items	42.9 ± 7.0	10–90 (33–57)
Self-reliance	α = 0.60, 8 items	47.4 ± 13.0	10–90 (27–70)
*Sensation seeking	α = 0.60, 9 items	54.6± 11.1	20–120 (35–76)
*Somatization	α = 0.20, 7 items	65.5 ± 11.5	20–120 (47–82)
BASC-C ages 6–11		**Average (N = 6)**	**Min–Max (Sample Min–Max)**
Atypicality		51.3 ± 4.03	20–120 (47–58)
Locus of control		54.7 ± 8.6	20–120 (42–65)
Social stress		53.0 ± 7.7	20–120 (41–61)
Anxiety		51.0 ± 4.5	20–120 (44–55)
Depression		59.2 ± 8.9	20–120 (50–72)
Sense of inadequacy		59.0 ± 7.4	20–120 (49–70)
Attention problems		58.0 ± 7.3	20–120 (51–69)
Hyperactivity		51.2 ± 5.1	20–120 (44–58)
Relations with parents		36.3 ± 7.9	20–120 (27–46)
Interpersonal relations		49.0 ± 8.6	20–120 (35–59)
Self-esteem		42.8 ± 9.3	20–120 (35–58)
Self-reliance		31.2 ± 3.8	20–120 (28–38)

did not complete all DSM-5 item questions and were excluded from result summaries of this scale. Final DSM-5 results among 15 Guyanese youth are summarised into eleven different subscales, listed in Table 1. Youth were asked "*During the past TWO (2) WEEKS, how much (or how often) have you been bothered by stomach-aches, headaches, or other aches and pains?*" or "*During the past TWO (2) WEEKS how much have you heard voices – when there was no one there – speaking about you or telling you what to do or saying bad things to you?*" Youth item endorsements ranged from: 0 = "none/not at all", 1 = "slight/rare, less than a day or two", 2 = "mild/several days or more", 3 = "moderate, more than half the days", and 4 = "severe/nearly every day". Item calibration

was performed on each instrument. More specifically, scale items were slightly adapted to convey meaning and reduce cross-cultural reading distractions.

Data analysis

First, we report demographic information and mean score performance on all BASC and DSM scales (Table 1). Next, in Table 2 we report the *N* (%) of youth categorised as *clinically significant* (*t*-score > 70; on adaptive scales a *t*-score < 30), *at-risk* (*t*-score 60–69; on adaptive scales a *t*-score 30–40), and *average* (*t*-score < 60; on adaptive scales a *t*-score > 40) (Figures 1 and 2). Similarly, using the DSM-5, we report youth categorised as presenting with *severe* ($\geq$ 3 on any domain scale item), *mild* (a rating > 0 but < 3 on any domain scale item), and *none* symptomatology (a '0'/'not at all' item response). Youth responses of "2-slight/less than a day or two" on Inattention (e.g. *During the past two weeks how much (how often) have you been bothered by not being able to pay attention when you were in class or doing homework or reading a book or playing a game?*) and Psychosis items, were classified as *severe* in the final analysis (American Psychiatric Association, 2013).

To evaluate scale validities we report correlations between and within DSM and BASC measures. Inter-correlations within the BASC and DSM scales ranged between 0.59 and 0.82. Correlations between BASC and DSM scales ranged between 0.55 and 0.89. In accordance with the ideation-to-action theoretical framework we hypothesise that connectedness, operationalised as interpersonal
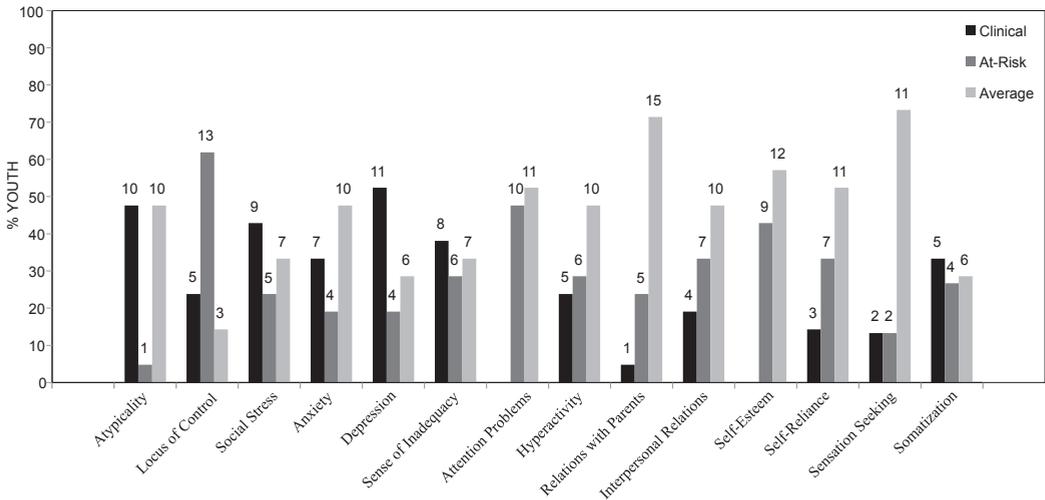
Figure 1: Risk and protective factors (*N* = 15 adolescent BASC; *N* = 6 child BASC; Average *T*-score <60; At-risk *T*-score 60-69; Clinically significant *T*-score >70)
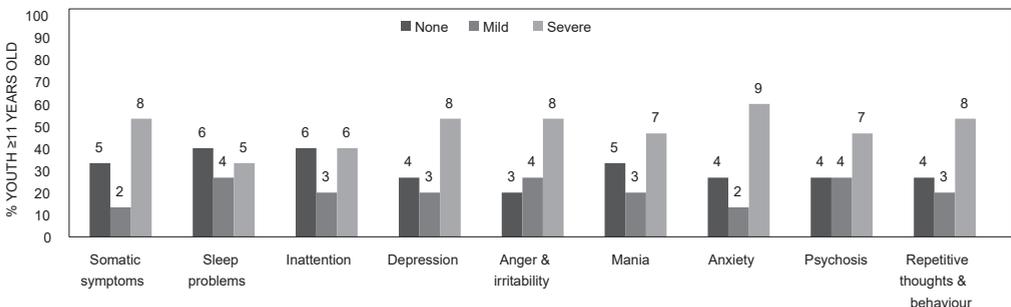
Figure 2: Clinical risk factors (*N* = 15; raw *N*s above bars)

relationships, is the key protective factor against escalating suicidality (Klonsky & May, 2015). We expect that those at highest risk for suicidal behaviour will endorse a need for connectedness; namely, youth at highest risk for suicidal behaviour will have a lack of interpersonal relationship skills when compared to youth at a lower risk for suicidal behaviour. Lastly, we report on any observed gender differences (Gray et al., 2015). Due to the small sample of clinically, high-risk participants, we focus on the report of descriptive findings; nonetheless we offer statistics on tests of significance (ANOVA, *t*-tests, and chi-square) for additional information (Braehler, 2013; Collett et al., 2016). Percentages in the written results section represent prevalence of the total study sample. Table percentages represent prevalence among youth who completed the specified evaluation tool (DSM-5, BASC-C, and BASC-A). Data were analysed using SPSS version 21.

Results

The sample comprised of twelve male and 13 female Guyanese youth ($n = 25$). The participants' mean age was 12.7 years old, and the modal age was 16 years. We discuss the results for all 25 orphans, although incomplete DSM-5 ($n = 2$) and BASC ($n = 4$) assessments were excluded from table results. Nine of the 25 (36%) youth reported previous attempt of suicide. Six of the nine youth responded "yes" to the DSM-5 question, "*Have you EVER tried to kill yourself?*" While the remaining three, expressed previous harm to self and provided a history of suicidal behaviour during the semi-structured interview with clinical staff.

   Of the nine Guyanese youth who endorsed a previous suicide attempt, three (33%) responded "yes" when asked, "*In the last 2 weeks, have you thought about killing yourself or committing suicide?*" Therefore, endorsement of current suicidal ideation comprised 12% (3/25) of our study sample and represented youth $\geq$ 13 years old, who also had attempted suicide in the past. The youngest endorsement of previous suicide attempt was from a 6-year-old male; the oldest, from a 17-year-old female. There were no significant gender differences for the endorsement of current or previous suicide attempt ($p > 0.69$). Table 2 summarises trends and significant associations between clinical risk factors on current and previous suicide attempt youth endorsements.

Table 2: Identified risk factors related to suicide ideation and attempt among Guyanese youth

	Hear bad voices	Had visions	Any substance	Repetitive thought/ behaviour	*Atypicality	*Locus of control	*Anxiety	*Depression	*Hyperactivity	*Somatisation	*Interpersonal relations
Current suicide $n = 3$	3(16.7)	2(33.3)	2(33.3)	3(27.3)	3(27.3)	3(16.7)	3(27.3)	3(20)	3(27.3)	2(22.2)	3(27.3)
Ever suicide $n = 9$	8(44)	7(38.9)	3(20)	6(54.5)	6(54.5)	8(44.4)	6(54.5)	6(40)	5(45.5)	5(55.6)	6(54.5)

Parentheses include column percentages.
*BASC subscale counts reflect an *N* of combined At-Risk and clinically significant classifications
Hear bad voices represent a combination of youth who endorsed either BASC-A 122, BASC-C 134 (*I hear voices in my head that no one else can hear*), BASC-A 160, BASC-C 106 (*I hear things that others cannot hear*), and/or DSM item 14 (*…heard voices when there was no one there-speaking about you or telling you what to do or saying bad things to you?* ($n = 18$)
Had visions represent a combination of youth who endorsed either BASC-A 130, BASC-C 95 (*I see weird things*), BASC-C 56 (*I see things that others cannot see*), or DSM item 15 (*…. had visions when you were completely awake-that is, seen something or someone that no one else could see*?) ($n = 18$)

BASC

The BASC-A ($n = 15$) and BASC-C ($n = 6$) summarised risk factors on 14 subscales. As depicted in Figure 1, a greater frequency of "clinically significant" symptoms was observed on subscales of: Depression ($n = 11$; 44%), Social Stress ($n = 9$; 36%), Sense of Inadequacy ($n = 8$; 32%), Somatisation ($n = 5$; 20%), and Atypicality ($n = 10$; 40%) relative to "at-risk" and "average" classifications on the remaining BASC subscales. Notably, seven of the youth (28%) endorsed symptoms of anxiety that would be classified as, "clinically significant". There were no significant correlates to interpersonal relationship skills, with the exception of social stress; increased social stress was related to decreased interpersonal relational skills ($r = -0.59$, $p = 0.02$).

DSM-5

Anxiety was most commonly endorsed as severe/nearly every day *(n = 9; 36%)*. More than half of the youth reported daily feelings of excessive worry. More specifically, many of these youth (26.9%) reported feelings of not being able to "stop worrying, nearly every day" but denied feelings of being "nervous, anxious, or scared". For at least one or two day(s), within two weeks, repetitive thoughts of *doing something bad or something bad happening (n = 8, 32%), checking things over again* ($n = 9$, 36%), *being poisoned* or *having germs (n = 9, 36%)*, and repeatedly *saying special things to keep something bad from happening* ($n = 7$, 28%) were endorsed by these youth. Five youth (20%) endorsed feeling worried *nearly every day about touching dirty things, or having germs or being poisoned*. We observed a trend for females to endorse more severe repetitive behaviours when compared to their male counterparts ($t = 2.12$, $p = 0.059$).

Guyanese youth who endorsed using a substance, responded "yes" to having an alcoholic beverage *(n = 3, 12%)*, drugs like marijuana, cocaine, crack or other club drugs ($n = 1$, 4%), used medication without a doctor's prescription to get high or change their feelings ($n = 2$, 8%), and smoking a cigarette, cigar, or pipe ($n = 2$, 8%).

Correlates of suicide

There were no observed differences between frequency ($p > 0.34$) and duration ($p > 0.27$) of psychiatric clinical symptomatology among those who endorsed a previous suicide attempt, versus those who did not. However, the data shows more self-reported, "at-risk" and "clinically significant" interpersonal relations skills among youth who endorsed "ever suicide" versus youth who did not endorse it ($t = -2.02$; $p = 0.057$). Also, youth who endorsed a previous suicide attempt had significantly higher T-composite scores on the interpersonal relations scale (suicidal youth mean score = 77.50, non- suicidal youth mean score = 63.75, $t = -2.49$, $p = 0.02$), when compared to youth who did not endorse a previous suicide attempt. Suicidal ideation significantly increased with age ($r = 0.496$, $p = 0.01$). However, a previous suicide attempt was not significantly correlated with age ($r = -0.02$, $p = 0.93$).

Discussion

We identified nine orphaned, Guyanese youth out of a sample of 25 (36%) who had a previous suicide attempt. Youth endorsed affective and melancholic risk factors, which is consistent with associations between early emergence of mood symptoms and suicide attempt (Beghi et al., 2013). Our findings identify anxiety, depression, mania, anger, repetitive behaviours, and atypicality as risk factors; with substantial overlap in those with suicidal behaviours among this high risk sample. We found that these youths endorsed dysregulated mood and energy as risk factors for suicidal behaviours. Specifically, the majority of the sample reported excessive thoughts and behaviours they identified to be unusual or atypical. Because a previous suicide attempt is still the strongest predictor for both suicide attempts and suicide completion (Beghi 2013; Owens et al., 2002), and as we observed multiple clinical risk factors matching those previously cited in the literature; these findings seem to indicate that there are no unique risk factors for suicide among this LMIC, Guyanese high risk youth population. Our data supports previous research indicating that separation from family, affective psychopathology, previous suicide attempts, and a lack

of interpersonal relations describe youth with persistent suicide risk and a high risk for suicidal behaviours (Appleby et al., 1999; Beghi et al., 2013; Blumenthal et al., 1990; Conejero et al., 2016). Despite the similar presentation of individual risk factors for suicidal behaviour among those in LMIC's and middle-to-high-income countries, the present study demonstrates the benefit and utility of investigating predictors of suicidal behaviours in LMIC's. Our high prevalence of suicide attempts indirectly suggests that the gap between suicide completions, at least in this LMIC and wealthier nations can be partially explained by available, mental health resource allocation and suicide prevention/intervention services in middle-to-high-income societies. In other words, the observed high prevalence of youth suicide in Guyana (and other LMIC's) can potentially be reduced with increased mental healthcare resources. Future studies should investigate generalisable risk factors to suicide behaviours in such resource limited settings.

These data also support the importance of interpersonal relationships among LMIC youth at risk for suicide. Preliminarily, we identify a stronger magnitude of association between the lack of interpersonal relationship skills and suicidal behaviour, when compared to the effect of psychiatric disorders on suicidal behaviours. Youth who reported a lack of success in relating to others were more likely to be suicidal than those who did not. Meaningfully, clinically significant interpersonal relations scores represent social disapproval from peers, as well as, adults. The inverse relationship between interpersonal relations and social stress further supports the self-reported importance of interpersonal skills for high risk youth. The modifiable nature of reducing, likely, chronic, tense, and strained social contacts (increasing safe and social outlets) for high risk, LMIC, youth is a promising finding that warrants further investigation. These data support programs that foster clinical and therapeutic interactions between staff and individuals at high risk for suicide, as reductions in mental health care (e.g. increased supervision, intensity of care following perceived clinical recovery) have been shown to be associated with persistent suicide risk and completion among inpatient suicide cases versus controls (Appleby, 1999). However, our data did not identify any individual level protective factors against suicide ideation and attempts (e.g., youth's self-esteem), but supports clinically meaningful activities performed by clinical staff and caregivers as beneficial for suicide prevention (Appleby, 1999).

Significant gender differences were not observed, although, the literature suggests that females in rural LMIC areas are at greater risk for suicide (Pitman et al., 2012; Stefanello et al., 2008) relative to males. Given the exploratory nature of this research, small sample size, and weak construct and criterion validity, diagnostic and clinical conclusions are withheld.

The novelty of this research presents promise for field research in LMIC's. It demonstrates administration of established US assessment measures, and identification of interpersonal, affective, and hyperactive (thought and behaviour) difficulties among youth in a limited resource setting. Our data coincides with the ideation-to-action theory, which explains that individuals who already feel pain and hopelessness, will not progress to strong suicidal ideation, suicide attempt, or plan, if connectedness is present. Therefore, youth with multiple risk factors for suicide only progress to suicidal behaviours when connectedness is absent. Given our observations of previous suicide attempts and suicide ideation in a youth sample currently separated from their parents, and with clinical risk factors, we document these identified risk factors in youth suicide behaviours in Guyana.

Note

[1.] This study was presented as an abstract at the International Summit on Suicide Research bi-annual meeting, New York City, NY, October 11–14, 2015.

References

American Psychiatric Association (2013). DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure— Child Age 11–17. http://www.psychiatry.org/psychiatrists/practice/dsm/dsm-5/online-assessment-measures

Appleby, L., Dennehy, J. A., Thomas, C. S., Faragher, E. B., & Lewis, G. (1999). Aftercare and clinical characteristics of people with mental illness who commit suicide: A case-control study. *Lancet, 353*(9162), 1397–1400. https://doi.org/10.1016/S0140-6736(98)10014-4

Beghi, M., Rosenbaum, J. F., Cerri, C., & Cornaggia, C. M. (2013). Risk factors for fatal and nonfatal repetition of suicide attempts: A literature review. *Neuropsychiatric Disease and Treatment, 9*, 1725-1736.

Bertolote, J., & Fleischmann, A. (2005). Suicidal behavior prevention: WHO perspectives on research. *American Journal of Medical Genetics,133C*(1), 8–12. https://doi.org/10.1002/ajmg.c.30041

Bertolote, J. M., & De Leo, D. (2015). Global suicide mortality rates–A light at the end of the tunnel? *Crisis, 33*(5), 249-253.

Bhatta, M. P., Jefferis, E., Kavadas, A., Alemagno, S. A., & Shaffer-King, P. (2014). Suicidal behaviors among adolescents in juvenile detention: Role of adverse life experiences. *PLoS One, 9*(2), 1–7. https://doi.org/10.1371/journal.pone.0089408

Blumenthal, S. J., & Kupfer, D. J. (Eds.). (1990). *Suicide over the Life Cycle: Risk Factors, Assessment, and Treatment of Suicidal Patients*. Washington: American Psychiatric Association.

Bolger, N., Downey, G., Walker, E., & Steininger, P. (1989). The onset of suicidal ideation I n childhood and adolescence. *Journal of Youth and Adolescence, 18*(2), 175–190. https://doi.org/10.1007/BF02138799

Braehler, C., Gumley, A., Harper, J., Wallace, S., Norrie, J., & Gilbert, P. (2013). Exploring change processes in compassion focused therapy in psychosis: Results of a feasibility randomized controlled trial. *British Journal of Clinical Psychology, 52*(2), 199–214. https://doi.org/10.1111/bjc.12009

Brent, D. A., Perper, J., Moritz, G., Allman, C., Friend, A., Schweers, J., … Harrington, K. (1992). Psychiatric effects of exposure to suicide among the friends and acquaintances of adolescent suicide victims. *Journal of the American Academy of Child and Adolescent Psychiatry,31*(4), 629–639. https://doi.org/10.1097/00004583-199207000-00009

Center for Disease Control (2014). Suicide Statistics Showing Continued Rise in Suicide Rate. *Centers for Disease Control and Prevention's (CDC) Data & Statistics Fatal Injury Report*.

Chotai, J. (2005). Suicide aggregation in relation to socio-demographic variables and the suicide method in a general population: Assortative susceptibility. *Nordic Journal of Psychiatry, 59*(5), 325–330. https://doi.org/10.1080/08039480500319621

Collett, N., Pugh, K., Waite, F., & Freeman, D. (2016). Negative cognitions about the self in patients with persecutory delusions: An empirical study of self-compassion, self-stigma, schematic beliefs, self-esteem, fear of madness, and suicidal ideation. *Psychiatry Research,239*, 79–84. https://doi.org/10.1016/j.psychres.2016.02.043

Conejero, I., Lopez-Castroman, J., Giner, L., & Baca-Garcia, E. (2016). Sociodemogrpahic antecedent validators of suicidal behavior: A review of recent literature. *Current Psychiatry Reports, 18*(94), 1-11. https://doi.org/10.1007/s11920-016-0732-z

De Leo, D. (2002). Why are we not getting any closer to preventing suicide? *British Journal of Psychiatry, 181*(5), 372–374. https://doi.org/10.1192/bjp.181.5.372

Dervic, K., Brent, D. A., & Oquendo, M. A. (2008). Completed suicide in childhood. *The Psychiatric Clinics of North America, 31*(2), 271–291. https://doi.org/10.1016/j.psc.2008.01.006

Eddleston, M., & Phillips, M. R. (2004). Self poisoning with pesticides. *British Medical Journal, 328*(7430), 42–44. https://doi.org/10.1136/bmj.328.7430.42

Gallagher, C. A., & Dobrin, A. (2006a). Deaths in juvenile justice residential facilities. [PubMed]. *The Journal of Adolescent Health,38*(6), 662–668. https://doi.org/10.1016/j.jadohealth.2005.01.002

Gallagher, C. A., & Dobrin, A. (2006b). Facility-level characteristics associated with serious suicide attempts and deaths from suicide in juvenile justice residential facilities. *Suicide & Life-Threatening Behavior, 36*(3), 363–375. https://doi.org/10.1521/suli.2006.36.3.363

Gray, C., Pence, B. W., Ostermann, J., Whetten, R. A., O'Donnell, K., Thielman, N. M., & Whetten, K. (2015). Gender (in)differences in prevalence and incidence of traumatic experiences among orphaned and separated children living in five low-and-middle income countries. *Global Mental Health, 2*, 1–11. https://doi.org/10.1017/gmh.2015.1

Gunnell, D., & Eddleston, M. (2003). Suicide by intentional ingestion of pesticides; a continuing tragedy in developing countries. *International Journal of Epidemiology, 32*(6), 902–909. https://doi.org/10.1093/ije/dyg307

Hagaman, A., K., Wagenaar, B. H., McLean, K. E., Kaiser, B. N., Winskell, K., & Kohrt, B. A. (2013). Suicide in rural Haiti: Clinical and community perceptions of prevalence, etiology, and prevention. *Social Science & Medicine, 83*, 61–69. https://doi.org/10.1016/j.socscimed.2013.01.032

Hijazi, Z., & Weissbecker, I. (2010). Mental health research in emergencies: Are assessments in a humanitarian setting ethical? *Ethical Dilemmas*, June, 21–34. https://internationalmedicalcorps.org/updates/are-assessments-in-a-humanitarian-setting-ethical/

Janofsky, J. (2009). Reducing inpatient suicide risk: Using human factors analysis to improve observation practices. *The Journal of the American Academy of Psychiatry and the Law, 37*, 15–24.

Kolves, K., & De Leo, D. (2014). Regions with the highest suicide rates for children and adolescents–Some observations. *Journal of Child and Adolescent Behavior, 2*, 1-2. https://doi.org/10.4172/jcalb.1000e104

Kõlves, K., & De Leo, D. (2016). Adolescent suicide rates between 1990 and 2009: Analysis of age group 15–19 years worldwide. *The Journal of Adolescent Health, 58*(1), 69–77. https://doi.org/10.1016/j.jadohealth.2015.09.014

Klonsky, E. D., & May, A. M. (2015). The Three-Step Theory (3ST): A new theory of suicide rooted in the "ideation-to-action" framework. *International Journal of Cognitive Therapy, 8*(2), 114–129. https://doi.org/10.1521/ijct.2015.8.2.114

Large, M., & Ryan, C. (2014). Suicide risk categorization of psychiatric inpatients: What it might mean and why it is of no use. *Australasian Psychiatry, 22*(4), 390–392. https://doi.org/10.1177/1039856214537128

Lopez-Castroman, J., Blasco-Fontecilla, H., Courtet, P., Baca-Garcia, E., & Oquendo, M. A. (2015). Are we studying the right populations to understand suicide? *World Psychiatry; Official Journal of the World Psychiatric Association (WPA), 14*(3), 368–369. https://doi.org/10.1002/wps.20261

Madsen, T., Agerbo, E., Mortensen, P. B., & Nordentoft, M. (2011). Predictors of psychiatric inpatient suicide: A national prospective register-based study. *The Journal of Clinical Psychiatry, 73*(2), 144-151.

Nock, M., Borges, G., Bromet, E., Cha, C., Kessler, R., & Lee, S. (2008). Suicide and suicidal behavior. *Epidemiologic Reviews, 30*(1), 133–154. https://doi.org/10.1093/epirev/mxn002

Nock, M. K., Green, J. G., Hwang, I., McLaughlin, K. A., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2013). Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry, 70*(3), 300–310. https://doi.org/10.1001/2013.jamapsychiatry.55

Owens, D., Horrocks, J., & House, A. (2002). Fatal and non-fatal repetition of self-harm. Systematic review. *The British Journal of Psychiatry, 181*(3), 193–199. https://doi.org/10.1192/bjp.181.3.193

Pearson, J., Stanley, B., King, C., and Fisher, C. (2005). Issues to consider in intervention research with persons at high risk for suicidality. *National Institute of Mental Health*. www.nimh.nih.gov/suicideresearch/highrisksuicide.cfm

Pitman, A., Krysinska, K., Osborn, D., & King, M. (2012). Suicide in young men. *Lancet, 379*(9834), 2383–2392. https://doi.org/10.1016/S0140-6736(12)60731-4

Roy, A. (2004). Family history of suicidal behavior and earlier onset of suicidal behavior. *Psychiatry Research, 129*(2), 217–219. https://doi.org/10.1016/j.psychres.2004.08.002

Rudatsikira, E., Muula, A. S., & Siziya, S. (2007). Prevalence and associated factors of suicidal ideation among school-going adolescents in Guyana: Results from a cross sectional study. *Clinical Practice and Epidemiology in Mental Health, 3*(13), 1-5. https://doi.org/10.1186/1745-0179-3-13

Stefanello.S., Cais, C. F. S., Mauro, M. L. F., Freitas, G. V. S., & Botega, N. J. (2008). Gender differences in suicide attempts: Preliminary results of the multisite intervention study on suicidal behavior (SUPRE-MISS) from Campinas, Brazil. *Revista Brasileira de Psiquiatria (Sao Paulo, Brazil), 30*(2), 139–143. https://doi.org/10.1590/S1516-44462006005000063

Swanson, S. A., & Colman, I. (2013). Association between exposure to suicide and suicidality outcomes in youth. *Canadian Medical Association Journal, 185*(10), 870–877. https://doi.org/10.1503/cmaj.121377

Vannoy, S., Whiteside, U., & Unutzer, J. (2010). Current practices of suicide risk management protocols in research. *Crisis, 31*(1), 7–11. https://doi.org/10.1027/0227-5910/a000004

Williams-Johnson, E., Williams, M., Gossell-Williams, M., Sewell, C. A., Abel, W. D., & Whitehorne-Smith, P. A. (2012). Suicide attempt by self-poisoning: Characteristics of suicide attempters seen at the emergency room at the University Hospital of the West Indies. *The West Indian Medical Journal, 61*(5), 526-531. https://doi.org/10.7727/wimj.2012.209

World Bank Group (2017). The World Bank. http://www.worldbank.org/en/country/guyana

World Health Organization (2014). Preventing suicide: A global imperative. ISBN: 978 92 4 156477 9.