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Suicidal Behaviors Among Emerging Adults in Kenyan Universities

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Abstract

This study examined the prevalence of suicidal thinking, planning, attempts, and self-harm and the associated psychological stressors in two Kenyan universities. The participants were undergraduate university students aged (18 -29) years. A convergent mixed-method study design was adopted to collect data. Self-administered questionnaires and focus group discussions were carried out among 431 students and six university counselors participated in a three-round Delphi survey. The study instruments were adopted from the Suicide Assessment Five-Step Evaluation & Triage (SAFE-T), Columbia Suicide Severity Rating Scale (C-SSRS), Non-Suicidal Self-Injury Assessment Tool (NSSI-AT), and Emerging Adult Stress Inventory (EASI). A multivariate analysis (MANOVA) was performed. The prevalence rate of suicidal thinking was 17.1%, suicidal planning 5.9%, suicidal attempts 7.8%, and self-harm 5.5%. Female students and private university students have a high prevalence of all suicidal behaviors. Feeling hopeless and depressed, financial difficulty, feeling anxious, family conflicts, and academic challenges were psychological stressors compelling emerging adults to suicidal behaviors. The prevalence of suicidal behaviors was like that found in other studies carried out in other countries. Suicidal behaviors are associated with mental illness symptoms. This should be considered by peers, parents, and

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university counselors to prevent and intervene in suicidal behaviors.

Keywords: Suicidal behaviors, emerging adults, psychological stressors, mixed methods, university students

Introduction

Suicidal behaviors are on the rise among emerging adults in universities, yet empirical studies on suicide rates and associated psychological stressors in Kenya are inadequate. Suicide is a global problem, with an estimated 800,000 people dying by suicide annually around the world (WHO, 2016). Suicidal is a top five cause of death in emerging adulthood in many countries (Palmer, 2011; Lewieckie & Miller, 2013; WHO, 2014; Mortier et al., 2018). For every suicide, numerous suicidal behaviors go unreported (Alabi et al., 2015). Self-harm is a strong predictor for later suicide (Kokkevi et al., 2012; O'Lounghlin et al., 2020). Suicide prevention is a key subject under mental health. Mental health continues to be a global priority, it was the fifth goal in the Millennial Development Goals [MDGs] (WHO, 2008; Hambrey, 2017) and the third goal in the health-related objectives in the Sustainable Development Goals [SDGs] (Droogers et al., 2020). Suicidal behaviors are a major public health concern accounting for serious injuries, death, and negative psychological and social problems among emerging adults (Stone et al., 2017). Kenya is not an exception (Nyamori, 2015; Wakesah, 2019; Wanyoike, 2015).

Emerging adulthood is a transitional period when adolescents are moving on to adulthood between the ages of 18 to 29 years (Arnett, 2000; Arnett, 2018). The transition is characterized by self-search, feeling "in-between", being unsteady, self-focused, and open to possibilities (Tanner & Arnett, 2016; Arnett, 2018). Emerging adults are faced with multiple transitions, such as leaving home, decreasing parental guidance and supervision, adjusting to university life, managing opportunities, increasing access to many risky activities, balancing the decisions related to career development, and committing to starting a family (Carter & McGoldrick, 2005; Sivertsen et al., 2019). These transitional tasks are achieved when the emerging adult forms personal values, finds a career path, and manages social pressure, and academic demands (Salokangas et al., 2020).

While suicide behaviors in childhood and adolescence are alarming, suicidal behaviors among emerging adults in universities are on the rise. Most research on suicidal behaviors is skewed toward children and adolescents (Geenl et al., 2014; Skinner & Mcfaull, 2012; Khasakhala et al., 2013; Ross et al., 2017; Sui, 2019). A review between 2011 to 2016 showed a 20% increase in suicide death among emerging adults (Trust for American Well-being Trust, 2019). Suicide is the second cause of death and serious injuries among

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emerging adults in university (Ayubi & Raju, 2020; World Health Organization [WHO] 2014; WHO 2016). Suicide is a result of suicidal behaviors: suicidal thinking, planning, attempts, and self-harm. These suicidal behaviors are on the rise among emerging adults in the university (O'Connor et al., 2018; Russell et al., 2019; Sivertsen et al., 2019). It is estimated that one in 10 emerging adults in the university struggle with suicidal thoughts, and one in nine have attempted suicide (Lageborn et al., 2017; Mortier et al., 2017). A suicidal attempt is the last step towards suicide; it is proceeded by suicidal thinking and planning. Studies observed that 48.8% of suicide attempters had prior suicidal thoughts and plans (Scocco et al., 2008). In addition, one in six emerging adults is engaging in self-harm. Those engaging in self-harm will attempt suicide two years after the first episode of self-harm (O'Connor et al., 2018).

Suicide is the top two leading causes of death among emerging adults in Europe, America, Australia/Oceania, and Asia (Asarnow & Ougrin, 2019). This means several suicidal behaviors such as suicidal thinking, planning, attempts, and self-harm are ongoing among this population. University students have a 13% lifetime prevalence of suicidal thinking (Mortier et al., 2017). Male students thought more about suicide than female students at a rate of (13%) and (10%) respectively (Mackenzie et al., 2011). The prevalence of non-suicidal self-injury was 5.9%, while 2.7% engaged in non-suicidal self-injury five times or more (Klonsky, 2011). Self-harm is a "gateway" to suicidal thinking because people engaged in self-harm twenty times and more were a risk of suicidal thinking (Whitlock et al., 2013).

There is a twofold risk of suicide among undergraduate students compared to university graduates (Lageborn et al., 2017). A review of studies between 1 January 1993 to 31 December 2011, reported that more male students 2.07% to 2.72% compared to female students 1.77% to 2.61% died by suicide (Lageborn et al., 2017). A sign that male students engaged more in suicidal thinking, planning, and attempt (Motamedi et al., 2016). There is a lifetime prevalence of 11.3% of suicide attempts and 16.2% of non-suicidal self-harm (NSSH) among young adults ages 18 - 34 years-old (O'Connor et al., 2018). It was estimated that one in four students exhibited depression symptoms, one in 10 struggled with suicidal thinking (Mortier et al., 2017), one in nine attempted suicides, and one in six engaged in non-suicidal self-harm (O'Connor et al., 2018).

Depression and anxiety symptoms are common presentations alongside suicidal behaviors among university students. Approximately 28.2% of university students have depressive symptoms and 33.1% battle with anxiety (Oyekcin et al., 2017). Although there are several prevalence studies of suicidal behaviors among emerging adults in the university, the findings highlight cultural and environmental differences. Yet, the majority of mental

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health practitioners rely on studies from Europe, North America, and Australia to understand the risk and protective factors of suicidal behaviors in Africa (Mars et al., 2014; Rukundo et al., 2018; Quarshie et al., 2020).

Suicidal behavior is a public health concern in Africa (Mars et al., 2014). A literature review of 53 countries in the continent of Africa found that only 16/53 countries had suicide rates data and 7/53 countries' suicidal attempt data (Mars et al., 2014). Moreover, African studies on suicidal behaviors focused on children and adolescents. It was evident that an increase in suicidal behaviors was accompanied by an increase in mental disorders (Bentajes et al., 2019; Korb & Plattner, 2014; Wanyoike, 2015; Abdu et al., 2020; Owusu-Ansah et al., 2020). The common mental disorders were major depressive disorders accounting for 24.7%, and generalized anxiety disorders, at 20.8% (Bantjes et al., 2019). Studies on suicidal behaviors among university students in Botswana, Ghana, and Ethiopia revealed alarming rates of suicidal behaviors that need urgent attention (Korb & Plattner, 2014; Owusu-Ansah et al., 2020; Abdu et al., 2020). Although these studies illustrated an increase in suicidal behaviors among emerging adults, empirical data on the Kenyan situation has not been factored in.

This study examines the prevalence rates of suicidal behaviors: suicidal thinking, suicidal planning, suicidal attempts, and self-harm, among emerging adults. It seeks to determine the psychological stressors compelling university students towards these suicidal behaviors. In addition, the study investigated the statistical relationship among personal factors that were risk factors and protective for suicidal behaviors.

Methods

A convergent mixed-methods study design was used in the study. The study was guided by the principles of the life course development framework. Participants completed a questionnaire assessing suicidal behaviors and psychological stressors. The tool was adapted from Suicidal Assessment Five Steps Evaluation-Triage (SAFE-T), Columbia-Suicide Severity Rating Scale (C-SSRS), Non-Suicidal Self-Injury Assessment Tools [NSSI-AT] (Whitlock & Purington, 2014; Yershova et al., 2016) and Emerging Adult Stress Inventory [EASI] (Murray et al., 2020). A test-retest method was used to test the reliability and validity of the questionnaire in examining the study objective. A test-retest was conducted among 30 university students randomly selected in a different university from where the study was carried out. Based on the Pearson Product Moment Correlation, a score of r= .83 was obtained. The results were greater than r >.80, the acceptable reliability indices. The content validity, construct validity, and internal validity were obtained by scrutiny of the research supervisors, and lecturers in the psychology

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department at Pan Africa Christian University. Peers reviewed the content to confirm that the questionnaire was measuring the intended variables.

The study involved 399 students who filled out the self-administered questionnaire, and 32 students were engaged in one of four focus group discussions. Six university counselors filled out a three-round Delphi survey. Participation was voluntary and no compensation was given for taking part in the study.

The universities were selected from two clusters: one private and one public university. A simple random sampling procedure was used to select the private university. The public university was purposively sampled; it was the only public university in the cluster in Kasarani Constituency. A stratified sampling method was used to select participants from five categories based on the years of study as reflected in the university's timetable. The class codes by year of study were written on pieces of paper and put in a big bowl. The papers were mixed up in the bowl and one paper was picked at a time without replacement. Two classes per year of study were selected. Only one class from the fifth year of study was available for selection. Nine classes per university were selected. A simple random sampling was done by assigning all the students attending the selected classes a number. The odd numbers for the study. The selected students completed a self-administered questionnaire. The response rate in the private university was 99.5% and 100% from the public university.

Sixteen students from each university were selected for a focus group discussion using convenient sampling. The students who had even numbers in the selected class were asked to volunteer for the study. Two students volunteered in seven classes and only one student volunteered in the fourth-and-fifth-year classes. The students were further divided into two groups of eight each, one from every year of study apart from the fourth-and-fifth-year students. Two interviewers facilitated each Zoom focus group discussion after contracting with each student to participate and record the discussion. Two Zoom focus group discussions were held at each university.

Six university counselors were selected using the snowball sampling procedure. Four counselors from the private university and two working in the public university participated in a three-round Delphi interview. The first round was a semi-structured open-ended questionnaire sent by email to each counselor. The second round were structured with closed-ended questionnaires generated from the counselors' responses which generated a Google form document. The third-round compelled the common responses to form the final questionnaire.

The quantitative data were analyzed by use of the Statistical Package for Social Sciences (SPSS) statistics version 27. Descriptive statistical methods were used to describe and summarize the findings using frequencies

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and inferential statistics. The relationship between variables was obtained using multivariate statistics (MANOVA). In this study, mean score indexes were used to obtain the frequencies of suicidal behaviors. While 5-scale indexes were used to measure suicidal thinking, suicidal planning, and suicidal attempts; 6-scale indexes were used to measure self-harm. A mean score of one meant that the participants engaged in one incident of suicidal behavior. A mean score of five or six meant that the participant had engaged in all incidences of suicidal thinking, planning, and attempts or self-harm. The qualitative data were coded, categorized thematically organized, and interpreted using NVIVO version 12. The Delphi interview consensus was analyzed using the Google Form tools to generate graphs and figures. The data from the quantitative and qualitative sources were triangulated, interpreted, merged, and reported. The data report was based on two steps of data analysis: a) examination of the demographic variables of the emerging adults and their families and b) correlations between individual variables and each suicidal behavior.

The study was authorized by the Pan Africa Christian University Research Ethical Review Committee (RERC) and the National Commission of Science, Technology, and Innovation (NACOSTI). In addition, the study was authorized by the Nairobi County government and the universities.

Results

A total of 399 undergraduate students participated in this study: 189 (47.4%) male, 208 (52.1%) female, and 2 (0.50%) other gender. One-hundred and ninety-nine students were drawn from the private university and 200 students from the public university. The average age range of the emerging adults in the university was 20 – 25 years, accounting for 316 (79.2%). The majority of the students 268 (67.2%) lived in the hostels whereas 131 (33%) lived at home. Of most students 160 (40%) live alone and 114 (29%) live with a schoolmate and only 82 (21%) live with parents/guardians and siblings. Thirty-three percent of emerging adults confide in peers and 28% confine in their mother. The family profiles of the emerging adults in this study revealed that both biological parents (father and mother) 289 (72.4%) are the dominant family structure. Most participants were 1st-born 144 (36.1%) and 101 (25%) 2nd-born in their family. Authoritative 240 (60.2%) and authoritarian 85 (21.3%) parenting styles were most prominent. The majority of the parents 289 (72.4%) were college educated.

Overall, the prevalence of suicidal behaviors was 17.1% engaged in suicidal thinking, 5.9% in suicidal planning, 7.8% in suicidal attempts, and 5.5% in self-harm. Furthermore, students engaged in multiple suicidal behaviors. The highest frequency for suicidal thinking was three times at

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(25%), suicidal planning five times at (19%), suicidal attempts five times at (22%), and two self-harm activities at (20%) (see Table 1).

Table 1. *Prevalence for Suicidal Behaviours and the Mean Score Indices*

		Mean Score Indexes Frequencies in Percentages					
Suicidal behaviors	*Suicidal Behaviors Examined*	1	2	3	4	5	6
Suicidal thinking	I have felt that life is not worth living. I have wished myself dead. I have thought dying is better than living. I have browsed online for ways to end my life. I have told someone my thoughts of ending my life.	26	15	25	20	14	x
Suicidal planning	I have planned on how to end my life. I have sort, visited or purchased an item with a plan to end my life. I have had a specific plan on how to end my life. I have abandoned a set plan to kill myself. I have told someone how I plan to end my life.	38	12	12	19	19	x
Suicidal attempt	I have come close to taking away my life. I have attempted to take away my own life. I have interrupted an attempt to take away my life. I have abandoned an attempt to kill myself. I told someone I had attempted to take away my life.	36	20	12	10	22	x
Self-harm	Cutting Biting Piercing with a sharp object Burning Overdosing on a drug or alcohol Others	58	20	15	1	1	6

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More female students engaged in all suicidal behaviors than the male students: suicidal thinking (Female 22% and male 12%); suicidal planning (female 7.6% and male 4.1%); suicidal attempts (female 11% and male 4.6%); and self-harm (female 6.8% and male 4.0%). And more private university students engaged in suicidal behaviors than the public university students: suicidal thinking (private 22% and public 13%); suicidal planning (private 7.1% and public 4.7%); suicidal attempt (private 11% and public 5%); and self-harm (private 7% and public 3.9%) (see Table 2).

Table 2. *Suicidal Behavior Prevalence by Gender and University Type*

	Overall		By gender				By unitype			
Variable	Observations	Percentage	Male Percentage	Female Percentage	Difference	p value	Private universities percentage	Public universities percentage	Difference	p value
Panel A: Suicidal thinking										
Feeling life is not worthy livin	399	27.3	20.7	33.7	13.0	0.004	32.7	22.0	10.6	0.017
Wished myself dead	399	18.5	12.7	24.0	11.4	0.004	24.1	13.0	11.1	0.004
Thought dying is better than liv	399	20.8	14.3	26.9	12.7	0.002	27.7	14.0	13.7	0.001
Browsed online for ways to endin	399	7.0	3.7	10.1	6.4	0.013	9.6	4.5	5.1	0.049
Told someone of the thoughts of	399	12.0	8.5	15.4	6.9	0.035	15.1	9.0	6.1	0.063
Panel C: Suicidal planning										
Planned how to end my life	399	7.0	4.8	9.1	4.4	0.089	8.6	5.5	3.0	0.235
Purchased an item to end life	399	4.3	2.1	6.3	4.2	0.043	5.6	3.0	2.6	0.212
Specific plan to end my life	399	6.0	3.7	8.2	4.4	0.063	8.1	4.0	4.1	0.09
Abandoned a set plan to kill mys	399	7.5	5.8	9.1	3.3	0.213	7.5	7.5	0.1	0.989
Panel B: Suicidal attempt										
Came close to taking away my lif	399	8.8	4.3	13.0	8.8	0.002	13.1	4.5	8.6	0.003
Attempted to take away my life	399	6.3	3.2	9.1	6.0	0.015	9.0	3.5	5.6	0.022
Interrupted the attempt to take	399	6.5	3.2	9.6	6.5	0.009	8.6	4.5	4.1	0.103
Abandoned an attempt to take awa	399	9.3	6.4	12.0	5.7	0.052	12.0	6.5	5.6	0.056
Told someone a suicidal attempt	399	8.0	5.8	10.1	4.3	0.119	10.5	5.5	5.1	0.064
Told someone the plan to take aw	399	4.8	4.3	5.3	1.1	0.624	6.0	3.5	2.6	0.237
Panel D: Self harm										
Cutting	399	7.0	4.3	9.6	5.4	0.036	9.0	5.0	4.1	0.115
Biting	399	5.0	3.7	6.3	2.6	0.248	6.6	3.5	3.0	0.166
Piercing with a sharp object	399	4.5	3.2	5.8	2.6	0.215	5.6	3.5	2.1	0.331
Burned	399	3.0	2.6	3.4	0.7	0.676	4.5	1.5	3.0	0.077
Overdosed on a drug/substance	399	4.5	3.2	5.8	2.6	0.215	5.6	3.5	2.1	0.331
Other	399	3.3	3.2	3.4	0.2	0.915	4.0	2.5	1.5	0.394
Level of significance 95% ; p<0.05										

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In addition, being younger in the university, 19 years and below recorded the highest prevalence for all suicidal behaviors: suicidal thinking (51.6%); suicidal planning (8.9%); suicidal attempt (12%); and self-harm (8.9%). Second-year students have a 22% prevalence for suicidal thinking, while fourth-year students had the highest prevalence for suicidal planning (7.6%), suicidal attempt (9.4%), and self-harm (7%). Besides, living alone and living in the hostels outside of the university were both positively correlated to all suicidal behaviors. The prevalence of suicidal behaviors by emerging adults' family profile revealed that emerging adults in families headed by guardian parents were most engaged in suicidal thinking (46%), suicidal planning (31.4%), suicidal attempt (29%), and self-harm (6%). Similarly, students from blended families were highly involved in suicidal thinking (27%) and suicidal attempts (21%). Neglectful parenting styles had the highest prevalence in all suicidal behaviors: suicidal thinking (28.5%), suicidal planning (11.5%), suicidal attempt (13.1%), and self-harm (10.8%). Authoritarian parenting had the second highest prevalence in all suicidal behaviors: suicidal thinking (24.5%), suicidal planning (8.7%), suicidal attempts (11.8%), and self-harm (5.9%).

Statistical analysis revealed that female students positively and significantly correlated to suicidal thinking (r =.38, R^2 (.16), $p< .05$) and suicidal attempts (r =. .28, R^2 (.12) $p < .05$). Similarly, public university students were negatively associated with all suicidal behaviors, especially suicidal thinking (r.-40, R^2 (.18), $p < .05$). Growing older was negatively correlated to all suicidal behaviors, especially suicidal thinking (r = -.17, R^2 = (.08), $p< .05$). While second, fourth and fifth-year students were positively associated with all suicidal behaviors; third-year students were negatively associated with suicidal attempt [r=-.05, R^2 (.02)], and self-harm [r=-.08, R^2 (.17)]. Living at home was negatively correlated to all suicidal behaviors. On the contrary, living in the hostels outside the university was positively correlated to all suicidal behaviors. Yet, living in the university hostel was negatively associated with suicidal thinking [r=-.37, R^2 (.31)] and suicidal attempts [r=-.08, R^2 (.23); but positively associated with suicidal planning [r=.09, R^2 (.21)] and self-harm [r=.01, R^2 = (.19)]. In addition, living alone and living with an intimate partner were positively correlated to all suicidal behaviors (see Table 3). Living at home with parents/guardians and siblings and living with a schoolmate were positively correlated to suicidal thinking, planning and attempts but negatively associated with self-harm. However, living with as sibling only was positively associated with suicidal thinking, attempts and self-harm but negatively correlated to suicidal planning.

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Table 3. *Demographic Statistics of the Emerging Adults' Profile and suicidal Behaviors*

	Suicidal thinking	Suicidal planning	Suicidal attempt	Self-harm
Type of university (Private=0, Public=1)	-0.402**	-0.026	-0.264*	-0.177
	(0.182)	(0.121)	(0.138)	(0.111)
Gender (Male=0, Female=1)	0.381**	0.159	0.279**	0.129
	(0.158)	(0.106)	(0.120)	(0.097)
Age in years	-0.171**	-0.110*	-0.102	-0.073
	(0.086)	(0.057)	(0.065)	(0.052)
Year of study				
1st year	Omitted due to collinearity			
2nd year	0.437	0.110	0.117	0.071
	(0.290)	(0.194)	(0.219)	(0.177)
3rd year	0.195	0.058	-0.051	-0.081
	(0.275)	(0.184)	(0.208)	(0.168)
4th year	0.157	0.228	0.200	0.121
	(0.291)	(0.194)	(0.220)	(0.178)
5th year and above	0.199	0.090	0.144	0.032
	(0.394)	(0.263)	(0.298)	(0.241)
Birth Position				
1st born	0.261	0.016	0.116	-0.083
	(0.337)	(0.225)	(0.255)	(0.206)
2nd born	0.160	-0.138	-0.028	-0.161
	(0.346)	(0.231)	(0.262)	(0.211)
3rd born	0.215	-0.057	-0.063	-0.033
	(0.365)	(0.244)	(0.276)	(0.223)
4th born	-0.209	-0.329	-0.260	-0.431*
	(0.385)	(0.257)	(0.291)	(0.235)
5th born	Omitted due to collinearity			
Other	0.305	-0.209	0.405	0.213
	(0.438)	(0.293)	(0.331)	(0.268)
Living arrangements in session				
At home	-0.015	-0.059	-0.038	-0.152
	(0.278)	(0.186)	(0.210)	(0.170)
In a hostel around the university	0.252	0.033	0.075	0.007
	(0.231)	(0.154)	(0.175)	(0.141)
In the university hostels	-0.370	0.091	-0.076	0.005
	(0.308)	(0.206)	(0.233)	(0.188)
In hostels away from the university	Omitted due to collinearity			
Who you live with				
Living with Parents/guardians and siblings	0.082	0.058	0.067	-0.129
	(0.513)	(0.342)	(0.388)	(0.313)
School mate	0.341	0.036	0.248	-0.170
	(0.554)	(0.370)	(0.419)	(0.339)
Parent/guardians only	Omitted due to collinearity			
Siblings only	0.178	-0.130	0.136	0.172
	(0.641)	(0.428)	(0.485)	(0.391)
Alone	0.563	0.333	0.267	0.112
	(0.541)	(0.361)	(0.409)	(0.330)
Intimate partner	0.490	0.400	0.344	0.189
	(0.623)	(0.416)	(0.471)	(0.380)

**** p<.01, ** p<.05, * p<.1*

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Additional statistical analysis revealed that being a first born was positively correlated to suicidal thinking, planning and attempts and being a fifth born onwards was positively suicidal thinking, attempts and self-harm. While being a second or third born was negatively associated with suicidal planning, attempts and self-harm; being a fourth born was negatively correlated to all suicidal behaviors (see Table 4). Three parenting styles strongly and positively correlated to all suicidal behaviors were: guardian headed families, blended families and both biological parents' families. Neglectful and authoritarian parenting styles were positively and significantly linked to suicidal thinking and suicidal attempts, but negatively correlated to suicidal planning and self-harm. The higher the parent's level of education, the higher the prevalence of suicidal behaviors.

Table 4. *Demographic Statistics of the Emerging Adults Family Profile and Suicidal Behaviors*

Family Structure				
Single parent male only parent	0.471		-	-
		0.008	0.133	0.180
	(1.155)	(0.771)	(0.873)	(0.705)
Single parent female only parent	0.539	-0.042	-0.170	-0.136
	(1.114)	(0.743)	(0.842)	(0.680)
Both biological parents(mother and father)	0.661	0.072	0.054	0.013
	(1.095)	(0.731)	(0.828)	(0.669)
Blended family	0.852	0.045	0.416	-0.008
	(1.147)	(0.765)	(0.867)	(0.701)
Brother/sister only	Omitted due to collinearity			
Guardian	1.776	1.103	0.854	1.232
	(1.229)	(0.820)	(0.930)	(0.751)
Parenting Styles				
Authoritarian	0.330	-0.029	0.139	-0.393
	(1.550)	(1.035)	(1.172)	(0.947)
Authoritative	-0.198	-0.142	-0.059	-0.391
	(1.548)	(1.033)	(1.171)	(0.946)
Neglectful	0.263	-0.016	0.029	-0.266
	(1.571)	(1.049)	(1.188)	(0.960)
Permissive	-0.145	-0.340	-0.261	-0.692
	(1.567)	(1.046)	(1.185)	(0.957)
Parent's Highest education Level	0.032	0.061	0.005	0.020
	(0.061)	(0.041)	(0.046)	(0.038)

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Who you confide in				
Mother	0.094	0.142	-0.094	0.545
	(0.589)	(0.393)	(0.446)	(0.360)
Father	0.020	0.249	-0.207	0.464
	(0.654)	(0.437)	(0.495)	(0.400)
Sibling(brother/sister)	-0.251	0.036	-0.236	0.365
	(0.614)	(0.410)	(0.465)	(0.375)
Relatives	**Omitted?**			
Peers/friends	0.274	0.394	0.016	0.472
	(0.584)	(0.390)	(0.442)	(0.357)
Pastor/religious leader	0.815	0.652	0.042	0.895
	(0.897)	(0.599)	(0.678)	(0.548)
No one	0.162	0.321	0.194	0.613*
	(0.597)	(0.398)	(0.451)	(0.364)
Other	0.050	0.223	-0.183	0.280
	(0.664)	(0.443)	(0.502)	(0.406)
Constant				
	-0.059	-0.128	-0.032	0.406
	(2.580)	(1.722)	(1.952)	(1.576)
Observations	397	397	397	397
R-squared	0.182	0.157	0.149	0.144

Standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

Focus Group Discussion and Delphi Interview Prevalence of Suicidal Behaviors

The findings from the focus group discussions on the prevalence rates of suicidal behaviors were convergent to those in the survey findings. However, some of the survey findings were divergent from those in the Delphi interviews. The students were asked to indicate on a scale of one to ten, where one indicated that the suicidal behavior was rare and ten indicated that the suicidal behavior was frequent. As shown in Figure 1, seven out of 32 (21.9%) participants indicated that suicidal thinking was common at a scale of seven. An indication that suicidal thinking was common among university students. These findings were divergent from the Delphi interviews, as shown in Figure 2. The majority of the counselors, four out of six indicated that suicidal thinking was rare among students and only two out of six considered suicidal thinking among university students to be severe.

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Figure 1. *Focus Group Discussion Prevalence for Suicidal Behaviors*

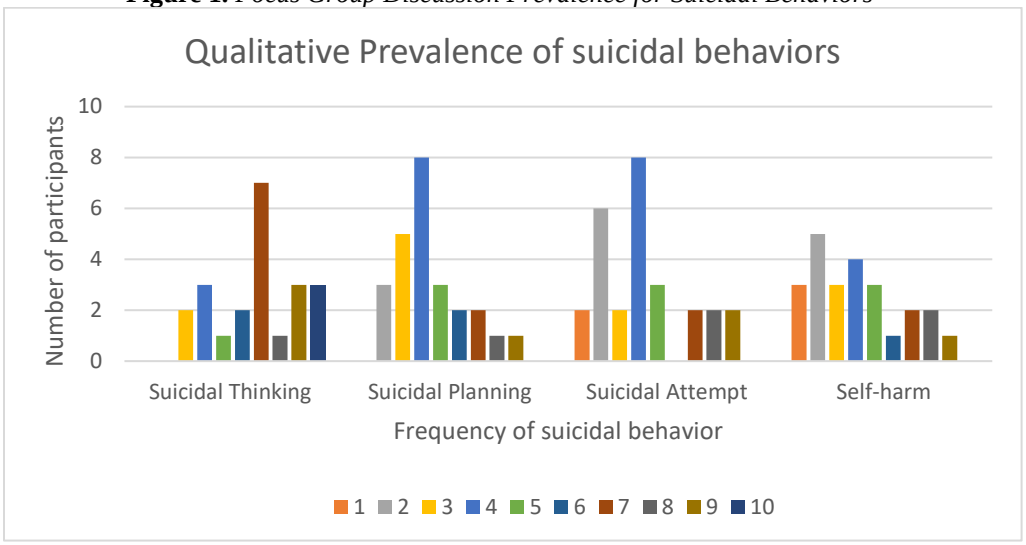
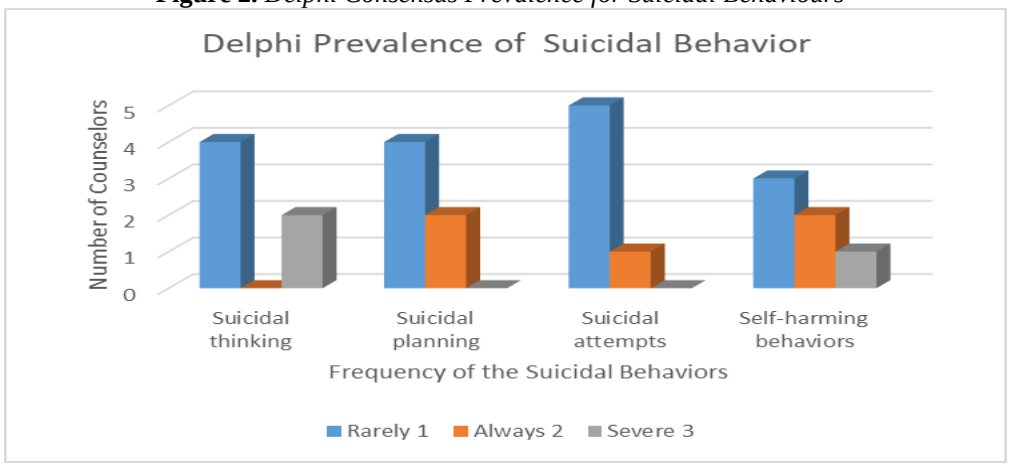


Figure 2. *Delphi Consensus Prevalence for Suicidal Behaviours*



The findings from the focus group discussions on the prevalence rates of suicidal planning among university students were convergent to those from the survey findings. The majority eight out of 32 (25%) participants rated suicidal planning on a scale of four out of ten. This meant that fewer university students were engaging in suicidal planning. These findings were converged to the Delphi interviews as seen in Figure 2. Two out of six counselors held that suicidal planning was common although not severe. The majority of the counselors, four out of six agreed that suicidal planning was rare among university students.

The findings from the focus group discussions on the prevalence rates of suicide attempts were divergent to those of the survey findings. Figure 1

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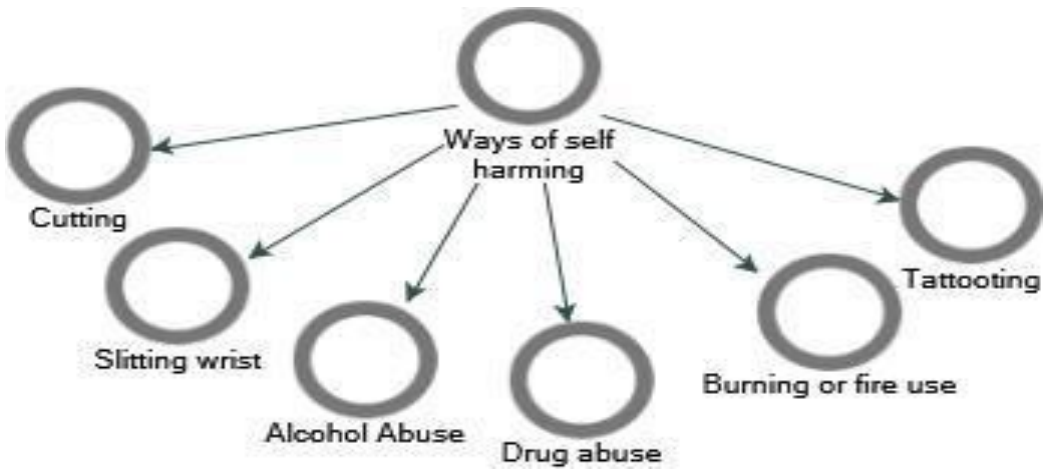
shows that eight respondents out of 32 (25%) rated suicidal attempt at a scale of four. This inferred that university students were less engaged in suicidal attempts. Similarly, the findings from the Delphi interviews were divergent to the survey finding. The majority five out of six counselors felt that university students rarely engaged in suicidal attempts and only one counselor agreed that suicidal attempt was frequent among university students, as seen in Figure 2. However, the survey findings revealed that suicidal attempts rates stood at 7.8% which was more frequent that suicidal planning 5.9% and self-harm 5.5%.

The prevalence rates of self-harm from the survey findings were similar to those from the focus group discussions and the Delphi interviews. These findings revealed that emerging adults were least engaged in self-harm compared to suicidal thinking, planning, and attempts. Five participants out of 32 (15.6%) indicated that university students engaged in self-harm on a scale of two. As shown in Figure 3, participants in the focus group discussions identified cutting, slitting wrist, burning, drug abuse, alcohol abuse, and tattooing as ways university students engaged in self-harm. As shown in Figure 2, one counselor thought that self-harm was severe, two thought it was frequent, and three thought that self-harm among university students was rare. At least three counselors agreed that self-harm among university students was happening.

Figure 3. *Ways Students Engaged in Self-harm.*



Psychological Stressors Linked to Suicidal Thinking, Planning, and Attempts

Psychological stressors associated with suicidal behaviors were feeling very hopeless (35.1%); feeling very depressed (33.3%); financial difficulties (28.1%); feeling very anxious (27.3%); family conflicts (20.8%); academic

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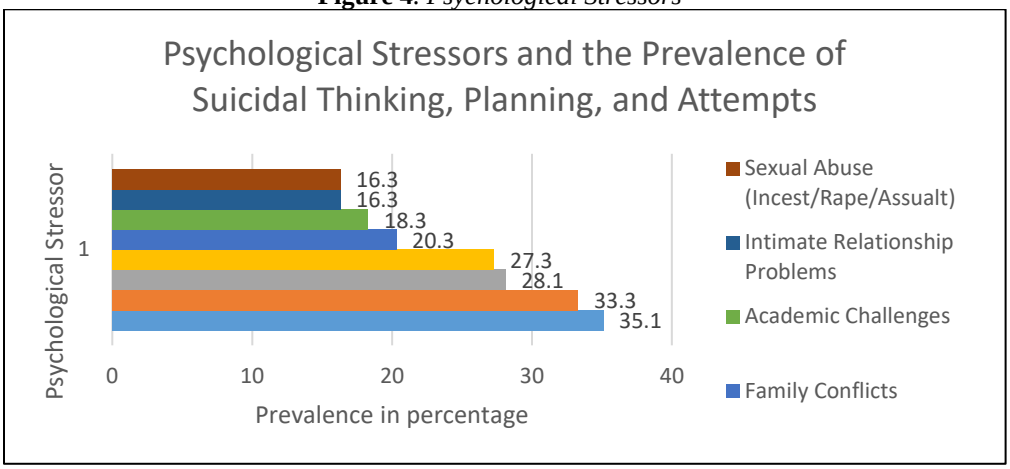
challenges (18.3%); intimate relationship problems (16.3%); and sexual abuse (incest/rape/assault) (16.3%) (see Figure 4).

Figure 4. *Psychological Stressors*



Female students experienced more: hopelessness (female 43.2% and male 26%); depression (female 39.9% and male 25.4%); and anxiety (female 34.4% and male 20.1%). Further analysis on the male and female differences was obtained using the t-test (see Table 5). The findings confirmed that female students experienced significantly more levels of hopelessness [t (43) = 0.17, p<.001]; depression [t (40) = 0.15, p<.002], and anxiety [t (34) = 0.14, p<.002] (see Table 5).

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Table 5. *Psychological Stressors and Suicidal Behaviours*

Variable	Overall		By Gender				By University Type			
	Observations N	Mean	Male %	Female %	df	p value	Private Uni %	Public Uni %	df	p value
Suicidal Thinking, Planning and Attempt										
Academic challenges	399	0.183	0.148	0.216	-0.068	0.08	0.186	0.18	0.006	0.879
Financial difficulties	399	0.281	0.286	0.274	0.011	0.796	0.257	0.305	-0.049	0.28
Family conflicts	399	0.208	0.148	0.26	-0.112	0.006	0.221	0.195	0.026	0.522
Intimate relationship problems	399	0.163	0.138	0.188	-0.05	0.18	0.145	0.18	-0.035	0.355
Contracted HIV/AIDS	399	0.123	0.138	0.111	0.027	0.416	0.12	0.125	-0.005	0.894
Sexually abused(incest/rape/assault)	399	0.163	0.111	0.211	-0.101	0.007	0.206	0.12	0.086	0.02
Diagnosed with a mental disorder	399	0.123	0.106	0.14	-0.034	0.31	0.131	0.115	0.015	0.635
Feeling very depressed	399	0.333	0.254	0.399	-0.145	0.002	0.397	0.27	0.127	0.007
Feeling very anxious	399	0.273	0.201	0.342	-0.141	0.002	0.287	0.26	0.026	0.554
Feeling very hopeless	399	0.351	0.26	0.432	-0.174	0.001	0.357	0.345	0.012	0.806
Other	399	0.043	0.011	0.068	-0.057	0.004	0.045	0.04	0.005	0.796
Self-Harm										
Sexually abused(incest/rape/assault)	399	0.208	0.143	0.265	-0.121	0.003	0.252	0.165	0.087	0.034
Trouble with intimate relations	399	0.155	0.148	0.164	-0.015	0.675	0.136	0.175	-0.04	0.28
Broke up with intimate partner	399	0.138	0.133	0.144	-0.012	0.732	0.141	0.135	0.005	0.869
Distressed with schoolwork	399	0.168	0.153	0.178	-0.025	0.514	0.161	0.175	-0.014	0.706
Conflict with parent/guardian(s)	399	0.178	0.127	0.226	-0.099	0.01	0.206	0.15	0.056	0.144
Other	399	0.033	0.021	0.044	-0.022	0.217	0.04	0.025	0.015	0.394

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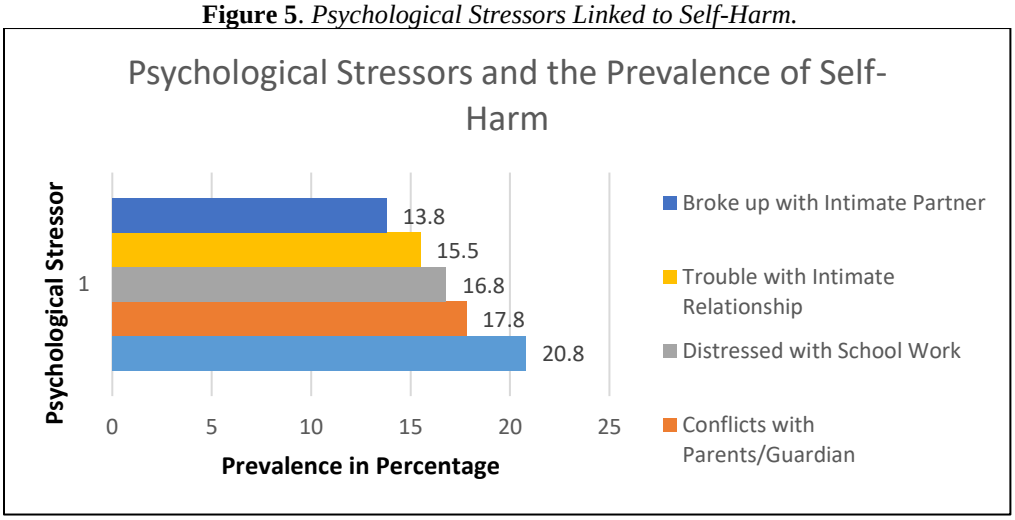
Furthermore, analysis by gender revealed that financial difficulties, family conflicts, academic challenges, sexual abuse, and intimate partner problems were drivers for suicidal behaviors among emerging adults. While financial difficulty was the major psychological stressor for male students (male 28.6% and female 27.4%); family conflicts were the key psychological stressors for female students (female 26% and male 14.8%). Sexual abuse was a prominent psychological stressor among female students (21.1% as compared to male students (11.1%). The differences between family conflicts and sexual abuse between females and males were significant: family conflicts [t (26) = 0.11, p<.006] and sexual abuse [t (21) = 0.10, p<.007].

The findings revealed that students in the private university experienced more feelings of depression (private 39.7% and public 34.5%), hopelessness (private 35.7% and public 27%) and anxiety (private 28.7% and public 26%). In addition, private university students had more family conflicts (private 22.1% and public 19.5%), sexual abuse (private 20.7% and public 12%), and diagnosis of mental disorders (private 13.1% and public 11.5%). The statistical differences recorded were: hopelessness [t (39.7) = 0.13, p<.007] and sexual abuse [t (20.6) = 0.09, p<.02] (see Table 5).

This study revealed that sexual abuse (incest/rape/assault) (20.8%); conflicts with parents/guardians (17.8%); distressed with schoolwork (16.8%), trouble in an intimate relationship (15.5%) and breaking up with an intimate partner (13.8%) were drivers for self-harm (see Figure 5).

Figure 5. *Psychological Stressors Linked to Self-Harm.*



There were gender and university differences in the prevalence of these psychological stressors. While female students indicated that sexual abuse (26.5%), conflicts with parents/guardians (22.6%) and distress with schoolwork (17.8%) were the psychological stressors compiling them to self-harm. Male students indicated that distress with schoolwork (15.3%), trouble

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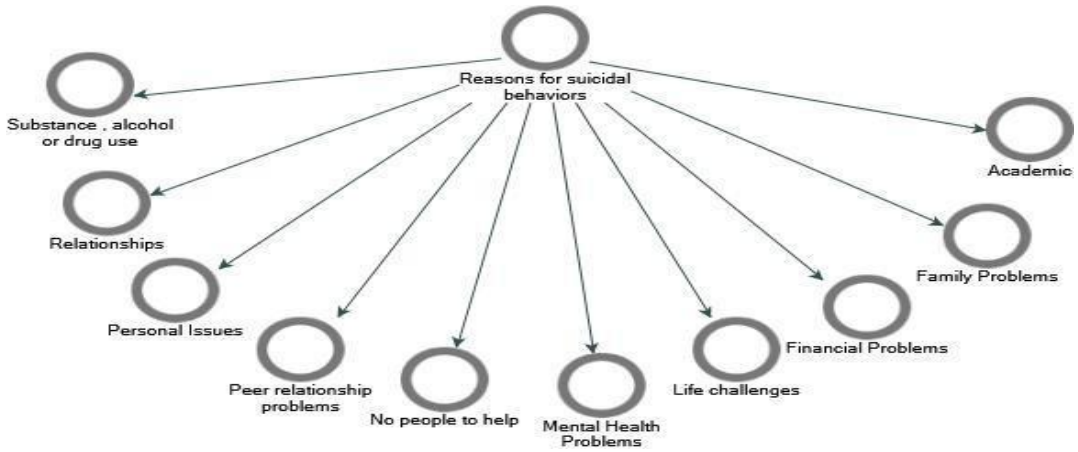
in an intimate relationship (14.8%), and sexual abuse (14%) were reasons they engaged in self-harm. These differences between female and male students were significant for sexual abuse [t (26) = 12.1, p<.003] and conflicts with parents/guardians [t (22) = 9.9, p<.01]. The dominant self-harm method for female students was cutting and alcohol abuse for male students. Students in the private university indicated that sexual abuse (25.5%), conflicts with parents/guardians (20.6%) and distress with schoolwork (16.1%) were the compelling reasons behind suicidal behaviors. Public university students considered distress with schoolwork (17.5%), trouble in intimate relationships (17.5%) and sexual abuse (16.5%) as the reason for engaging in self-harm. There was a significant difference between sexual abuse [t (25) = 8.9, p<.034] as a driver for self-harm in the private university and public universities.

The survey findings on the psychological linked to suicidal behaviors were similar to those of the focus group discussions and the Delphi Interviews. The participants in the focus group discussions identified ten psychological stressors thematically organized as the psychological stressors compelled emerging adults in the universities to engage in suicidal behaviors (see Figure 6).

Figure 6. *Psychological Stressors Compelling Students to Suicidal Behaviours*



Moreover, the counselors involved in the Delphi interviews identified parental rejection, mental health symptoms, drug and alcohol use, financial problems, and relationship breakups as the psychological stressors associated to suicidal behaviors among emerging adults in the universities.

Discussion

This study provides new information on the prevalence of suicidal behaviors among emerging adults in the two Kenyan university. Prior prevalence studies on suicidal behaviors involved children and adolescents. The highest frequency of suicidal behaviors among university students was

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suicidal thinking (17.1%), suicidal attempts (7.8%), suicidal planning (5.9%) and self-harm (5.5%). Female students and students in private universities recorded the highest rates across all suicidal behaviors. Feeling very hopeless, very depressed, very anxious, having financial problems, family conflicts and academic challenges were the main psychological stressors compelling students to suicidal behaviors. Protective factors against suicidal behaviors included: living at home, having parents who employed authoritative or permissive parenting styles and the absence of family conflicts, academic distress and relationship problems.

The study revealed the average age range of emerging adults in the university to be 20 -25 years. At this stage, emerging adults are making important choices in education and career, gender identity, changing support systems from family to peers, exploring an independent identity apart from their family, and desired to appear 'normal'. These generate internal and external stress that might compel emerging adults to suicidal behaviors. Therefore, emerging adults still need family and parental support to navigate transitional challenges and develop healthy coping skills for the prevailing challenges (Valdez et al., 2013). Nurturing a positive parent-child relationship characterized by warmth, sensitivity, steady discipline, supervision, participation, and support is protective against suicidal behaviors (McKinney et al., 2017; Perquire et al., 2021).

The prevalence of suicidal thinking among university students was 17.1%. These findings were both similar and dissimilar to others studies. Mortier et al. (2017) from the USA, noted a 13% of students had a lifetime of suicidal thinking. At the same time, two studies in Turkey by Oyekin et al. (2017) and Toprak et al. (2011) recorded students' rates of suicidal thinking at 15.1% and 11.4%, respectively. A study conducted in Canada, the Midwest, and the Northwest of the USA recorded male suicidal rates of 13% and females at 10% (Mackenzie et al., 2011). A study in Ghana by Owusu-Ansah et al. (2020) documented that 15.2% of the university students in the study had death wishes, and 6.3% had suicidal ideations. In China, the prevalence rate for suicidal thinking was 9.2% (Zhai et al., 2015). However, these findings revealed less suicidal thinking compared to a study in 12 Muslim Countries that recorded a 22% rate of suicidal thinking (Eskin et al., 2018). A study by Abdu et al. (2020) in Ethiopia recorded 58.3% of suicidal thinking among students. Another study in Botswana recorded a 47.5% rate of suicidal thinking in university students. This means that the rate of suicidal thinking among emerging adults in the two Kenyan universities was higher than those in the USA, Canada, Turkey, China and Ghana. However, these rates were lower than those in 12 Muslim countries, Ethiopia and Botswana.

The rates of suicidal planning were 5.9%. These rates were lower than those recorded by Wilcox et al. (2010) in the USA 0.9% in suicidal planning.

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Considering that Wilcox et al. study is older, these rates might be different today. However, two other studies recorded higher rates of suicidal planning than the findings in this study. A study in Ghana recorded 6.8% in suicidal planning (Owusu-Ansah et al., 2020) and a study in Ethiopia recorded 37.3% in suicidal planning among emerging adults in the universities (Abdu et al., 2020). Hence, Kenyan students in the two selected universities recorded lower rates of suicidal planning than those in Ghana and Ethiopia.

A significant 7.8% of university students engaged in suicidal attempts. This rate was higher than in several such studies: 0.9% in the USA (Wilcox et al., 2010); 7.1% in Turkey (Torprak et al., 2011); 4.4% in Ethiopia (Abud et al., 2020), and Ghana 6.8% (Owusu-Ansah's et al., 2020). Nonetheless, the rates of suicidal attempts in Kenya were lower than those among university students in Scotland at 11.2% (O'Conner et al., 2018), in 12 Muslim countries at 8.6%, and in Botswana at 28.7%. This means that emerging adults in the two selected Kenyan universities engaged less in suicidal attempts than students in Scotland, 12 Muslim Counties, and Botswana. On the other hand, Kenyan students engaged in more suicidal attempts than university students in the USA, Ethiopia, Turkey, and Ghana.

This study revealed that emerging adults in the selected universities in Kenya had a 5.5% rate of self-harm. This was similar to other studies that recorded a low prevalence rate for self-harm (Whitlock et al., 2006; Lageborn et al., 2017 & O'Connor et al., 2018). However, five studies recorded a high prevalence of self-harm. A study in the USA recorded 37.5% of self-harm (Marie, 2016), another American study recorded a rated of 17% (Whitlock et al., 2006), and 16.2% engaged in self-harm in Scotland (O'Connor et al., 2018). A study in Turkey recorded a high rate of 15.4% of self-harm and in South Africa 19.4% engaged in self-harm (Walt, 2016). It was noted that emerging adults in the selected universities in Kenya had the lowest rates of self-harm compared to emerging adults in the USA, Scotland, Turkey, and South Africa. Although this was positive, the decrease in self-harm and other suicidal behaviors among emerging adults in Kenya remains a priority.

Based on this study, female students were more engaged in suicidal behaviors than their male counterparts. These findings differed from similar studies in which male students had a higher prevalence of suicidal behaviors (Mackenzie et al., 2011; Motamedi et al., 2016; "Campus Suicides", 2018; Goodman et al., 2018; Nyamori, 2015). However, few studies were parallel to these findings where female students recording high rate of suicidal behaviors than male students (Tang et al., 2018; Abdu et al., 2020; Eskin et al., 2019).

The study generated new information that identified private universities, living alone, living in the hostels outside the university, and confiding in peers as risk factors for suicidal behaviors. This calls for universities to equip students with problem-solving skills and help-seeking

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procedures as the need arises. Students need to be psycho-educated on what to do if they encounter a peer exhibiting suicidal thoughts, plans, attempts, and self-harm so they can be assisted to deal with underlying psychological concerns.

This study revealed that feeling hopeless, depressed, and anxious were the reason emerging adults were engaging in suicidal behaviors. These findings corresponded to numerous studies linking the three mental illness symptoms; feeling hopeless, depressed, and anxious, to suicidal behaviors among university students (Mortier et al., 2017; Othieno et al., 2014; Bruffaerts et al., 2018; Krasnova et al., 2015; Auerbach et al., 2016; McLaughlin & Gunnell, 2020; Oketch-Oboth & Okunya, 2018).

After intervening for the mental illness symptoms, the main psychological stressors driving emerging adults to suicidal behaviors were financial difficulties, family conflicts, conflicts with parents/guardians, academic challenges, sexual abuse, and intimate relationship problems. These findings were similar to many studies which identified financial problems, academic stressors, parent-child conflicts, family conflicts, problems in romantic relationships as reasons emerging adults were engaging in suicidal behaviors (McLaughlin and Gunnell (2020), Ajibola & Agunbiade, 2022; Wang & Wu, 2021; Halliburton et al., 2021; Oketch-Oboth & Okunya, 2018; Owiti, 2019; Nyamori, 2015).

Conclusion

Emerging adults in universities are engaging in suicidal behaviors. There is a need to engage all stakeholders to eliminate, reduce, and prevent the surge in these behaviors. Emerging adults need skills to deal with stress and conflicts in the family and in intimate relationships. As a culture, there is a need to address negative attitudes, stigmatization, and discrimination in addressing mental health issues. This study provides insight for marriage and family therapists, mental health practitioners, psychologists, and counselors to systemically assess and treat students with mental illness symptoms, and financial, academic, family, and relationship problems to prevent suicidal behaviors.

Implications

Universities need to design ways to psycho-educate students on mental health and support them with life skills to help them manage the emerging adulthood transition void of suicidal behaviors. Hostel owners need to provide emergency contacts for students to find psychological treatment whenever they need it.

Parents and guardians need to adjust their parenting styles with emerging adults and cultivate a positive parent-emerging adult relationship

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characterized by freedom and responsibility, warmth, sensitivity, steady discipline, supervision, participation, and support. And resist negative control, rigidity, unfriendliness, overprotection, rejection, intimidation, and tough parenting.

Mental illness, such as feelings hopeless, depression, and anxiety are key indicators of suicidal behaviors in university students. Therefore, parents, peers, lecturers, university health workers, and staff need to call out students exhibiting these symptoms to seek interventions. Additionally, university counselors need to assess suicidal behaviors among students dealing with financial, family, academic, and relational problems. This will help to prevent and treat students who might be engaging or about to engage in suicidal behaviors.

Limitation

This study may not be generalizable in other universities outside the study. However, these findings provide the bases for a conversation on the risk and protective factors for suicidal behaviors among university students in Kenya and beyond.

Recommendations

Parents, university administrators, lecturers, university counselors, and hostel owners need to work together to address the risk for suicidal behaviors in the universities, especially in the private universities and among female students.

Further Research

There is a need to extend this study to more universities in different counties in Kenya to confirm these findings. Such a study should involve a bigger sample size of students and university counselors. A longitudinal study can help track emerging adults' suicidal behaviors from the first to fourth year and try clinical interventions to reduce suicidal behaviors among the students.

Conflict of Interest: There was no conflict of interest in carrying out this study.

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