

## **Post-Traumatic Stress Disorder And Associated Risk Factors Among Young Adults In Selected Secondary Schools In Lakes State, South Sudan**

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### **Abstract:**

*Posttraumatic stress disorder is a mental condition that develops after a person has been exposed to traumatic events. Traumatic events are dreadful, shocking, scary and dangerous experience that affect someone, which possibly causes clinically significant distress or impairment in the life of some of the young adults. This study investigated posttraumatic stress disorder and associated risk factors among young adults in selected secondary schools in Lakes State, South Sudan.*

**Material and Methods:** *The study used a quantitative approach using a descriptive research design. Descriptive cross-sectional survey was also used.*

*The sample size for the study was 366 students. Multi stage sampling method was used to identify the schools then randomly select the final participants proportionally. A social demographic questionnaire, Harvard trauma Questionnaire and types of traumatic events questionnaires were used respectively. Statistical Package for Social Science version 26 (SPSS version 26) was used to analyze the quantitative data, using frequencies and percentage expressions, and then presented in summary tables.*

**Results:** *In the study findings, the study has established that death trauma (61.2%), unfortunate news (57.7%), robbery (53.8%), fear of death or injury (50.3%) and forceful threats (44.3%) are the types of traumatic events experienced by young adults in selected secondary schools in Lakes State, South Sudan. Furthermore, the study found that Trauma ( $0.000 < p = 0.05$ ) has a significant relationship with PTSD. Regarding the prevalence of PTSD symptoms among young adults in selected secondary schools in Lakes State, South Sudan, and the study has found the prevalence to be 15.3%. Further the research has established that gender of the participants, with the significance level as  $0.032 < p = 0.05$  is a risk factor to developing PTSD.*

**Conclusion:** *The study concludes that the types of traumatic events influence the development of PTSD and gender is a risk factor to developing PTSD.*

**Key words:** *Post-Traumatic Stress Disorder (PTSD), Trauma, Traumatic event, Risk Factors.*

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### **I. Introduction**

Posttraumatic stress disorder (PTSD) is one of the painful life experiences to bear among humans of all ages. Any human is likely to experience trauma, regardless of their status and soci-cultural background. A young adult's progressive life could possibly be thwarted as a result of PTSD. Dumo (2018) defined posttraumatic stress disorder (PTSD) as a persistent psychological strain brought about by terrifying event such that either a person is experiencing it or witnessing it and having disturbing memory of the event. PTSD is a mental condition that develops after an individual has been exposed to traumatic events. Exposure to traumatic event on a young adult when is not treated may have repercussions that could creep into adulthood and may

result in cognitive issues, academic difficulties, and deficiencies in language development, inability to relate well, and abstract reasoning abilities (National Institute for Health and Clinical Excellence, 2019).

In addition, the National Institute of Mental Health (2020) opined that the risk factors for PTSD included: living through dangerous events and traumas, getting hurt, seeing people hurt or killed childhood trauma, feeling horror, helplessness, or extreme fear. Others include having little or no social support after a sad event, dealing with extra stress after the event; such as loss of a loved one, terrorism, rape, accident, pain and injury, or loss of a job or home, having a history of mental illness and excessive patronization of drugs (Kleber, 2019; Dafaalla et al., 2016).

Young adults who have been found to experience higher rates of poverty and physical abuse, as well as children who have been exposed to physically traumatic experiences, can develop PTSD (Woodburn, 2018). When trauma exposure is frequent and repeated in young people, it may lead to a negative effect on their entire life, including their employment, relationships, health, academic performance, and enjoyment of routine activities. Disturbance symptoms lead to clinically substantial misery or functional impairment in life endeavors (Woodburn, 2018).

Exposure to traumatic events may not be limited to adults and war survivors only but can happen to children and becomes a lifelong psychological stress to the child and carried along to young adult. According to the National Institute for Health and Clinical Excellence (2019) and Mugisha et al., (2015), most young adults who experience traumatic events may have been exposed to them at some stage of growth. Some of these kids will find themselves revisiting horrific events in their minds, while others could role-play the events in their play, and yet others will want to avoid anything that can bring back their pain and anguish. Furthermore, Mugisha et al., (2015) asserted that if untreated in childhood, they may have consequences that last into adulthood. These events frequently cause distress and reactions including rage, jitteriness, dread, and even guilt. For some people, the symptoms may go away with time, but for others, they will persist until early adulthood and ultimately turn into PTSD (National Institute for Health and Clinical Excellence, 2019; Mugisha et al., 2015). Young individuals are frequently exposed to trauma and they consequently develop PTSD; between the ages of 15 and 82, 5% of young adults experience a traumatic event and between 0.6 and 3.9% and 1.3 to 8.1%, respectively, may have PTSD over the course of a lifetime (Woodburn, 2018).

In the USA, a study was conducted by Kearney et al. (2010) claimed that maltreatment was one of the root causes of young adults' experience of PTSD in the human society. Maltreatment was connected with a plethora of internalizing as well as externalizing behavior problems, such as reactive attachment disorder, consistent fear of people and environment, substance abuse, emotional instability, anxiety, depression, suicidality and other self-destructive conduct, eating disorder, and then disruptive behaviors. The annual frequency of youth maltreatment across several Western countries (United States, United Kingdom, Canada, and Australia) is substantial for physical abuse (4-16%), sexual abuse and rejection (5-10%) psychological abuse (10%), pre-meditated neglect (1-15%), and exposure to intimate partner violence (10-20%). Many (34.6%) who report any kind of maltreatment report more than one type of trauma. Similar, studies around Poland, Germany and Slovenia, as conducted by Ochnik et al. (2022) revealed longitudinal predictors for coronavirus-related PTSD in a representative sample of young adults aged 20-40 years. The study found that perceived stress, fear of COVID-19, fear of vaccination, and trust in institutions were significant positive predictors in the coronavirus-related PTSD longitudinal prediction model. This study by Ochnik et al (2022) was focused on the adults aged 20 to 40 years, whereas this current study will be carried out among young adults between the ages 18-25 years in selected secondary school in Lake State, South Sudan.

In South Africa, Atwoli et al. (2013) argued that PTSD was a reality among different age group in the country. Based on his assertion, South Africa was a developing country with a deep history characterized by previous constitutional racial segregation and exploitation in the form of apartheid that gave way to a non-racial democracy only in 1994. This change was achieved by a protracted liberation struggle, characterized by political violence as well as state sponsored oppression. After apartheid, high levels of often criminal interpersonal violence continued, fuelled by rapid urbanization and ongoing socioeconomic disparities that resulted in a high level of trauma exposure, over 80% in some studies. PTSD was assessed among the group from 18-29, 30-44, 45-59, and 60 or older. It was found that PTSD emanated from war event ( $M=2.6$ ), physical violence ( $M = 1.8$ ), sexual violence ( $M = 2.6$ ), accident ( $M = 3.3$ ), unexpected death of loved one ( $M = 3.3$ ) and witnessing death and torture ( $M= 8.3$ ). The study inferred that reducing the occurrence of PTSD among these different groups may significantly reduce the overall burden of PTSD in the general population of the country. This was an interesting study that investigated PTSD among the different age group. However, due to the different target age groups, it did not deeply concentrate on particular age group. This present study hopes to focus on the young adults (18-25 years) who are in selected secondary school in Lake State, South Sudan.

In South Sudan, there are numerous risk factors to PTSD among its youngest population. War has severe direct and indirect effects on human health, human endeavors and development. The consequence of war led to immense suffering of mass populations of South Sudanese (Betancourt et al., 2020). Beyond the obvious

loss of life and destruction of properties, war led to devastating mental health consequences which last for generations (Betancourt et al., 2020). The most common psychiatric disorders that result from war trauma comprise anxiety, depression, and posttraumatic stress disorder (PTSD). Regularly, studies of war challenge and post-conflict populations in South Sudan have found high occurrence rates of trauma-associated mental disorders. This is ranging from 3 to 88% for PTSD, 12 to 85% for depression, and 25 to 81% for anxiety (Abu Suhaiban et al., 2019). According to Atari and McKague (2015), South Sudan have been adversely affected by conflict and persistence war over seven decades. During the prolonged period of conflict, which continue to this day, South Sudanese have been exposed to numerous atrocities including, rape, abduction of women and children, beheadings, looting and burning of livestock, and mass killings disproportionately targeting civilians (Jok, 2015). In the second Sudanese civil war that started from 1983 to 2005, an estimated 2.5 million South Sudanese died horribly, and over 5.5 million of the citizens were displaced from their homes. Also, in the most recent conflict that started in December 2013, it is projected that over 400,000 people have been killed and approximately 4.5 million people, 41% of the country's 11 million citizens, were forcibly displaced to refugee camps in neighboring countries like Kenya and Uganda (Sullivan, 2018).

Tutlam et al. (2022) in their study among the South Sudanese found that multitudes of South Sudanese refugees who had settled in refugee camps in Ethiopia had to flee back into South Sudan. This was because the government that had accommodated them was dethroned in 1991 (Tutlam, 2013). Many of the South Sudanese, including unaccompanied adolescents famously known as the "lost boys of South Sudan" perished during the flight back to a country still at war and those who survived had to make arduous journeys through hostile territories to get to refugee camps in Kenya where some were then processed for resettlement in the West. It was also reported that the prevalence of PTSD in a sample of 4626 participants, the pooled prevalence of PTSD was 40.4% (Tutlam et al., 2022). The prevalence of trauma-associated mental disorders was as well very high. Reports showed that 100 adults from South Sudan in a refugee camp in Uganda were at PTSD prevalence of 32 % (Tutlam et al., 2022). This was a study that was conducted on the general population of South Sudanese within and outside the territory. This current study will specifically be focusing on the young adults between the ages 18-25 years in selected secondary school in Lake State, within South Sudan.

## **II. Theoretical Frameworks**

### **Dual Representation Theory**

The dual representation theory (DRT) was developed by Brewin, Dalgleish, and Joseph in the year 1996 (Brewin, et al., 1996). It is a psychological theory that offers explanation of posttraumatic stress disorder (PTSD). This theory proposes that certain symptoms of PTSD, for example, nightmares, flashbacks, and emotional disturbance may be attributed to memory processes that occur after exposure to a traumatic event (Brewin, et al., 1996). DRT proposes the existence of two separate memory systems that takes place in parallel during memory formation: the verbally accessible memory system (VAM) as well as the situation accessible memory system (SAM).

According to Brewin et al. (1996), the VAM system contains information that is consciously processed and thus can be voluntarily recalled or described. In contrast, the SAM system contains unconsciously processed sensory information that cannot be voluntarily recalled.

This theory is relevant to the study because it offers an explanation to the development and memory processes of PTSD. Therefore, since the study is focused on types of traumatic events, and prevalence of PTSD symptoms among young adults in Lakes States region, this theory helps the researcher explicitly establishes a theoretical link of the two variables. Based on its strength, the Dual Representation Theory's greatest strength is its ability to anticipate that completion and integration will be marked by a lack of attentional bias towards stimuli associated to trauma. Despite the theory's contribution to the field, it is not without weakness. The frequency of intrusive thoughts is actually increased by contextual information that is given before exposure to distressing stimuli. This seems to go against DRT's theory, according to which intrusive sensations are lessened when sensory information from the SAM and contextual information from the VAM combine. DRT has also come under fire for failing to adequately explain how the VAM and SAM systems communicate with each other.

### **The Cognitive Model of Post-traumatic Stress Disorder**

Cognitive Model of Post-traumatic Stress Disorder was developed by Ehlers and Clark in the year 2000 (Ehlers & Clark, 2000). This theory postulates that human beings experience PTSD when they undergo sad and terrifying events in their lives (Ehlers & Clark, 2000). PTSD may develop if a person encounters a traumatic event in a way that causes them to feel like there is an immediate and substantial threat. The threat can manifest itself in both external and internal ways. A threat to safety is the hallmark of an external threat, while harm to oneself or the future characterizes an interior threat that is capable of interfering with one's life and meaningful endeavors.

Furthermore, the model postulates that alertness, anxiety, intrusions, and adverse emotional reactions go hand in hand with a perception of threat. Nevertheless, this process obstructs some potential helpful cognitive shifts, which eventually results in the onset of PTSD (Gunst, et al., 2016). Brewin (2014) claimed that re-experiencing of PTSD by a person consists of sensory impressions rather than thoughts such as thinking suppression) (for example, avoidance, and use of substances thought suppression can lead to more frequent experiences of what is being suppressed.

### III. Methodology

This study used a cross-sectional survey was used. A descriptive cross-sectional survey was used to collect data to make inferences about a target population at a specific time (Creswell, 2017).

The study was conducted in Lakes State, South Sudan. The Lakes State was the most ideal location for the study since it had many young adults in secondary schools that were directly affected by war in South Sudan.

The sample size for this study was 403 participants drawn from high school students attending public and private schools and included mixed girls only and boy’s only schools. While youth constitute the majority in the state, this study selected secondary schools because they represented diverse groups within the state, ethnic groups and also schools are convenient for the researcher. The research also considered the young adults aged between 18 - 25 years who were in the secondary schools. The 18 - 25 years age groups were selected based on the fact that they are the ones who are school going and majority are in secondary school. This age group could also understand issues with subject matter; thus they were most ideal. The target population covered both the male and the female genders from the selected secondary schools.

In this study, multistage sampling will be employed to carry out the investigation. This study sought to have a representative sample from diverse sub-groups that come from different parts of South Sudan, yet residing in Lakes State, and also from different tribes. In the first stage, proportionate stratified random sampling approach was used to identify schools from each of the eight counties within Lakes State. Using this approach, 15 schools (11 private and 4 public) were sampled out of the 23 schools that were registered in Lakes States.

Furthermore, the second stage used simple random sampling method so as to get sample sizes. This approach was used as a first step to map out and as well understand approximately how many students were there in each of the schools, before the final sample can be calculated. The researcher used a formula developed by Krejcie and Morgan (1972) to determine the number of students to include in the sample size that was drawn from the study population. Harvard Trauma Questionnaire (HTQ) and Types of Traumatic Event Questionnaire (TEQ) were used as the research instruments for this study.

### IV. Findings

This particular section gives details pertaining the personal information of the respondents who did participate in this particular study with regard to age, gender religion, education and support.

#### Age

**Table 1: Age bracket**

Age Bracket	Frequency	Percent
18-20 years	245	66.9
21-23 years	93	25.4
24-25 years	28	7.7
<b>Total</b>	<b>366</b>	<b>100.0</b>

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

The study findings indicate that majority of the respondents 245(66.9%) were in the age bracket of 18-20 years, while those in the age bracket of 21-23 years were 93(25.4%). The rest 28(7.7%) were in the age bracket of between 24- 25 years.

#### Gender

**Table 2: Gender**

Gender	Frequency	Percent
Female	154	42.1
Male	212	57.9
<b>Total</b>	<b>366</b>	<b>100.0</b>

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

From the study findings the male gender was the highest 212(57.9%) while the female gender was 154(42.1%).

**Religious Affiliation**

**Table 3: Religious Institution**

Religious Institution		Frequency	Percent
	Roman Catholic	182	49.7
	Protestant	136	37.2
	Muslim	2	0.5
	Any other	46	12.6
	<b>Total</b>	<b>366</b>	<b>100.0</b>

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

From the research results Roman Catholics were the highest 182(49.7%), while Protestants were 136(37.2%). Those who belonged to other religious institutions were 46(12.6%), while the Muslims were 2(0.5%).

**Educational Level**

**Table 4: Educational Level**

Educational Level		Frequency	Percent
	Form 1	80	21.9
	Form 2	96	26.2
	Form 3	99	27.0
	Form 4	91	24.9
	<b>Total</b>	<b>366</b>	<b>100.0</b>

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

The research results indicate that majority of the respondents 99(27%) were in form three while those in form 2 were 96(26.2%). Those in form 4 were 91(24.9%) while the rest 80 (21.9%) were form 1.

**Who supports you for your school needs**

**Table 5: Who support you for your school needs**

Who support you for your school needs		Frequency	Percent
	Father	141	38.5
	Mother	137	37.4
	Any other	88	24.0
	<b>Total</b>	<b>366</b>	<b>100.0</b>

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

From the research results majority of the respondents 141(38.5%) had their fathers support their school needs while 137(37.4%) had their mothers support their school needs. The rest 88(24%) had other people support their school needs.

**Descriptive Analysis of the Research Objectives**

This section discusses research results according to the research objectives of the study.

**Types of Traumatic Events Experienced by Young Adults**

The first objective of the study was to identify types of traumatic events experienced by young adults in selected secondary schools in Lakes State, South Sudan.

**Table 6: Types of Traumatic Events**

	Yes	%	No	%
1. Has anyone ever tried to take something directly from you by using force or the threat of force such as a stick-up or mugging?	162	44.3	204	55.7
2. Has anyone ever attempted to rob you or actually robbed you (i.e. stolen your personal belongings)?	197	53.8	169	46.2
3. Has anyone ever attempted to or succeeded in breaking into your home when you were not there?	153	41.8	213	58.2

4. Have you ever had a serious accident at work ,in a car, or somewhere else?(If yes, please specify below)	104	28.4	262	71.6
5. Have you ever experienced a natural disaster such as a tornado, hurricane, flood or major earthquake, etc.	149	40.7	217	59.3
6. Have you ever experienced a “man-made” disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury?(If yes, please specify below)	126	34.4	240	65.6
7. Has anyone ever attempted to or succeed in breaking into your home while you were there?	107	29.3	259	70.8
8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health?	54	14.8	312	85.2
9. Have you ever been in any other situation in which you were seriously injured?(If yes, please specify below)	122	33.3	244	66.7
10. Have you ever been in any other situation in which you feared you might be killed or seriously injured?(If yes, please specify below)	184	50.3	182	49.7
11. Have you ever seen someone seriously injured or killed? (If yes, please specify who below)	224	61.2	142	38.8
12. Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for any reason?(If yes, please specify below)	205	55	161	44
13. Have you ever had a close friend or family member murdered, or killed by a drunk driver?(If yes, please specify relationship[e.g. mother, grandson, etc.] below)	129	35.2	237	64.8
14. Have you ever had a spouse, romantic partner, or child die? (If yes, please specify relationship below)	84	23	282	77
15. Have you ever had a serious or life-threatening illness?(If yes, please specify below)	98	26.8	268	73.2
16. Have you ever received news of a serious injury, life-threatening illness, or unexpected death of someone close to you?(If yes, please indicate below)	211	57.7	155	42.3
17. Have you ever had to engage in combat while in military service in an official or unofficial war zone?(If yes, please indicate where below)	31	8.5	335	91.5
18. Has anyone ever made you have intercourse or oral or anal sex against your will?(If yes, please indicate nature of relationship with person [e.g., stranger, friend, relative, parent, sibling] below)	25	6.8	341	93.2
19. Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat?(If yes, please indicate nature of relationship with person [e.g. stranger, friend, relative, parent, sibling] below)	35	9.6	331	90.4
20. Other than incidents mentioned in Questions 18 and 19, have there been any other situations in which another person tried to force you to have an unwanted sexual contact?	26	7.1	340	92.9
21. Has anyone, including family members or friends, ever attacked you with a gun, knife, or some other weapon	89	24.3	277	75.7
22. Has anyone, including family members or friends, ever attacked you without a weapon and seriously injured you	94	25.7	272	74.3
23. Has anyone in your family ever beaten, spanked, or pushed you hard enough to cause injury?	120	32.8	246	67.2
24. Have you experienced any other extraordinarily stressful situation or event that is not covered above?	106	29	260	71

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

The study findings have established that death trauma 224(61.2%), unfortunate news 211(57.7%), robbery 197(53.8%), fear of death or injury 184(50.3%) and forceful threats 162(44.3%) were the types of traumatic events experienced by young adults in selected secondary schools in Lakes State, South Sudan.

**Prevalence of PTSD among Young Adults**

The second objective of the study was to determine prevalence of PTSD among young adults in selected secondary schools in Lakes State, South Sudan.

**Table 7: Prevalence of PTSD**

		Frequency	Male	Female	Percent
	Those with PTSD	56	34	22	15.3
	Those without PTSD	310	177	133	84.7

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Shoeb et al., (1992) recommended 2.5 as the cut point when interpreting the scores. This implies that individuals with total scores  $\geq 2.5$  are considered symptomatic for PTSD. The study results have established that those with PTSD symptoms were 56(15.3%) and those without PTSD symptoms were 310(84.7%) among

young adults in selected secondary schools in Lakes State, South Sudan. With regard to gender, male respondents with PTSD were 34(9.3%) and female respondents with PTSD were 22(6.0%).

**Risk Factors for PTSD among Young Adults**

The third objective of the study was to establish risk factors for PTSD among young adults in selected secondary schools in Lakes State, South Sudan.

**Table 8: Model Summary showing ANOVA**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.160 <sup>a</sup>	.026	.012	8.04835
a. Predictors: (Constant), Support of school needs, Age Bracket, Gender of Participants, Religious Background, Educational level				

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Results show that the strength of relationship between independent variables (support of school needs, age bracket, gender of participants, religious background and educational level) and dependent (PTSD) is positive but weak (R=0.160). Further the table indicates that independent variables (support of school needs, age bracket, gender of participants, religious background and educational level) explained 2.6% of the change in PTSD among young adults in selected secondary schools in Lakes State, South Sudan (R square= 0.026). This therefore means that there is a weak but positive correlation between demographics and development of PTSD.

**Table 9: Analysis of Variance for Demographics and PTSD**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	614.622	5	122.924	1.898	.094 <sup>b</sup>
	Residual	23319.345	360	64.776		
	Total	23933.967	365			
a. Dependent Variable: Total Score PTSD						
b. Predictors: (Constant), Support of school needs, Age Bracket, Gender of Participants, Religious Background, Educational level						

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

There were no statistically significant differences between group means of independent variables (support of school needs, age bracket, gender of participants, Religious background and Educational level) and the dependent (PTSD) variable since ( $F(5,360) = 1.898, p = 0.094 > 0.05$ ). This means that combination of demographics of the respondents does not contribute to developing PTSD.

**Table 10: Analysis of Variance for Age Bracket**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Total Score PTSD * Age Bracket	Between Groups	(Combined)	849.409	2	424.704	6.678	.001
	Within Groups		23084.558	363	63.594		
	<b>Total</b>		<b>23933.967</b>	<b>365</b>			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Concerning the group mean of age bracket the results established a significance value of 0.001. Since the p-value is  $0.001 < 0.05$  it can be concluded that there is statistically significant main effect between the group means of the age bracket. Therefore, there was need to establish which category of age bracket was significant through further analysis and the results are shown below.

**Table 11: Analysis of Variance for Age Bracket total scores**

Total Score PTSD			
Duncan <sup>a,b</sup>			
Age Bracket	N	Subset for alpha = 0.05	
		1	2
18-20 years	245	32.6367	
21-23 years	93	30.4409	
24-25 years	28		36.5357
Sig.		.134	1.000
Means for groups in homogeneous subsets are displayed.			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

From the results the two categories (21-23 years and 18-20 years) have their means displayed in the same column; it implies that there is no difference between their means. The one for 24-25 years is in a different column; it implies that their means are significantly different from the others.

**Table 12: Analysis of Variance for Gender**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Total Score PTSD * Gender of Participants	Between Groups	(Combined)	71.865	1	71.865	1.096	.296
	Within Groups		23862.102	364	65.555		
	<b>Total</b>		<b>23933.967</b>	<b>365</b>			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

With regard to the group means of gender of participants, the results established a significance value of 0.296. Since the p-value is  $0.296 > 0.05$  it can be concluded that there is not a statistically significant main effect between the group means of the gender.

**Table 13: Analysis of Variance for Religious Background**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Total Score PTSD * Religious Background	Between Groups	(Combined)	339.144	3	113.048	1.734	.160
	Within Groups		23594.823	362	65.179		
	<b>Total</b>		<b>23933.967</b>	<b>365</b>			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Pertaining the group mean of religious background, the results established a significance value of 0.160. Since the p-value is  $0.160 > 0.05$  it can be concluded that there is not a statistically significant main effect between the group means of the religious background.

**Table 14: Analysis of Variance for education level**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Total Score PTSD * Educational level	Between Groups	(Combined)	36.038	3	12.013	.182	.909
	Within Groups		23897.929	362	66.016		
	<b>Total</b>		<b>23933.967</b>	<b>365</b>			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Concerning the group mean of educational level, the results established a significance value of 0.909. Since the p-value is  $0.909 > 0.05$  it can be concluded that there is not a statistically significant main effect between the group means of educational level.

**Table 15: Analysis of Variance for Support of school needs**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Total Score PTSD * Support of school needs	Between Groups	(Combined)	58.749	2	29.375	.447	.640
	Within Groups		23875.218	363	65.772		
	<b>Total</b>		<b>23933.967</b>	<b>365</b>			

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

With regard to the group means of support of school needs, the results established a significance value of 0.640. Since the p-value is  $0.640 > 0.05$  it can be concluded that there is not a statistically significant main effect between the group means of school needs.

Since the ANOVA test only compared the means of the demographic information, a Regression coefficients for Demographics and PTSD was required to establish which of the demographics ( age bracket, gender, religious background, educational level and support of school needs) can or cannot be a risk factor to developing PTSD as shown in Table 18 below.



**Table 16: Regression coefficients for Demographics and PTSD**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	27.354	2.830		9.665	.000
	Age Bracket	1.239	1.327	.096	.934	.351
	Gender of Participants	3.464	1.609	.211	2.152	.032
	Religious Background	1.463	.897	.176	1.631	.104
	Educational level	.861	1.102	.116	.781	.435
	Support of school needs	-1.884	1.480	-.181	-1.273	.204

a. Dependent Variable: Total Score PTSD

Relationship of the dependent and independent variables was determined using regression model given as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

Where: Y is PTSD (dependent variable);  $\beta_0$  is the constant or the intercept of the regression line;  $\beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5$  are regression coefficients for predictor variables (independent variables);  $X_1$  is age bracket;  $X_2$  is gender;  $X_3$  is religious background,  $X_4$  is Educational level and  $X_5$  is support of school needs

$$Y = 27.354 + 1.239X_1 + 3.464 X_2 + 1.463 X_3 + 0.861 X_4 - 1.884 X_5 + \epsilon$$

From Table 16, significance level corresponding to age bracket is  $0.351 > p = 0.05$ . We therefore accept that age is not a risk factor to developing PTSD. Regarding gender of the participants, the significance level is  $0.032 < p = 0.05$  and therefore gender is a risk factor to developing PTSD. Additionally, religious background, educational level and support of school needs had significant levels of  $0.104 > p = 0.05, 0.435 > p = 0.05$  and  $0.204 > p = 0.05$  respectively all of which  $p > 0.05$ , therefore they are not risk factors to developing PTSD.

This means that out of the five independent variables, that is, age bracket, religious background, educational level and support of school needs, only gender was found to be a risk factor to developing PTSD.

**Table 17: Analysis of Variance for Trauma and PTSD**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3414.895	1	3414.895	60.579	.000 <sup>b</sup>
	Residual	20519.073	364	56.371		
	Total	23933.967	365			

a. Dependent Variable: Total\_Score PTSD  
b. Predictors: (Constant), Trauma Total

Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

As shown in Analysis of Variance in Table 17, there was statistically significant differences between group means of independent variable (Trauma) and the dependent (PTSD) variable since  $(F(1,364) = 60.579, p = 0.000 < 0.05)$ . This implies that Trauma has a significant relationship with PTSD.

**Table 18: Regression coefficients for Trauma and PTSD**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.073	2.892		3.483	.001
	Trauma Total	.702	.090	.378	7.783	.000

a. Dependent Variable: Total\_Score PTSD  
Note. Data collected by author on the 18<sup>th</sup> May - 8<sup>th</sup> June 2023.

Applying the regression analysis model  $Y = \beta_0 + \beta_1 X_1$ ,

Where: Y is PTSD (dependent variable);  $\beta_0$  is the constant or the intercept of the regression line;  $\beta_1$  is regression coefficients for predictor variable (Trauma) and  $X_1$ , is Trauma, the regression model therefore becomes,

$$Y = 10.073 + 0.702 X_1$$

This means that for any unit increase in Trauma leads to increase in the rate of PTSD by 0.702 units, as shown in Table 18 above.

## V. DISCUSSION

### **Types of Traumatic Events among Young Adults in Selected Secondary Schools in Lakes State, South Sudan.**

The study established that the types of traumatic events that exist among young adults in selected secondary schools in Lakes State, South Sudan are death trauma 224(61.2%), unfortunate news 211(57.7%), Robbery 197(53.8%), fear of death or injury 184(50.3%) and forceful threats 162(44.3%) as they were found to have the highest percentage. Traumatic events in human life can be a deeply distressing experience that can be emotionally, mentally, and physically overwhelming. As the Dual Representation theory suggests, a human mind captures vivid sensory information during the traumatic event, which is automatically remembered through exposure to trauma-related triggers.

The findings of this study concur with the one carried out by the National Health Scheme (NHS, 2011), which focused on helping children who have experienced traumatic events in the USA. It was found that at least 26% of children and youth in the United States had experienced different types of traumatic events before reaching 4 years. Also, the results of this current study further concur with the study conducted in the USA by Siegel (2017) who established that 24% of males and 16% female young people had been exposed to traumatic events like robbery, neglect, rape and community violence, natural catastrophes and the untimely death of close ones. Again, the research results also agree with the findings from Miranda (2016) who noted that traumatic event types such as exposure to rape, witnessing mass killings, displacements and being refugee and widow were estimated at 18% of 4+ traumatic event types.

### **Prevalence of PTSD among Young Adults in Selected Secondary Schools in Lakes State, South Sudan**

The study established using a cut point of 2.5 as recommended by Shoeb et al., (1992), those with PTSD were 56(15.3%) and out of 56(15.3%), 34(9.3%) were males and 22(6.0%) were females, whereas those without PTSD (both males and females) were 310(84.7%) among young adults in selected secondary schools in Lakes State, South Sudan. According to Sheikh et al. (2015), prevalence rate of PTSD was 62.3%, and depression was at 59.7%. The possible sufferers of PTSD are those who live in small to medium income nations typically characterized with poor mental health services with a severity of 22% PTSD higher than 8% global rate (Nga et al., 2020). Further, the study carried out by Strohmeier et al. (2018) also established that prevalence of PTSD was (24%), depression (39%), anxiety disorder (38%), hazardous alcohol consumption in men (35%) and women (36%), and the burnout components emotional exhaustion (24%) and depersonalization (19%).

The result of this study concur with the study conducted by Amone et al. (2014) among 18 year olds during an ongoing conflict who found that the prevalence of PTSD was 11.8% with 13.4% female participants and 15.7% male participants. The findings of the current study findings resulted to 15.3% prevalence rate with 9.3% male respondents and 6.0% female respondents which are lower than those from Amone et al. (2014) which established that the prevalence of PTSD was 11.8%. These differences could be due to the time in which both studies were carried from the time the conflict started. Further Adaku et al. (2016) noted that the prevalence of PTSD in their study was 40.7% which was worrying concern. In this current study, the prevalence of PTSD is 15.3% which is lower than 40.7% of Adaku et al. (2016) implying the political stability since 2018 to date.

### **Risk Factors for PTSD among Young Adults in Selected Secondary Schools in Lakes State, South Sudan.**

Concerning gender of the participants, this research found that gender was a risk factor to developing PTSD with a significance value of  $0.032 < p < 0.05$ . This concurs with the study done by Halligan and Yehuda (2014), who found that gender, was an extremely salient risk factor, even controlling for differences in the type of events that are experienced by men compared to women, however, Halligan and Yehuda (2014) claim in their findings that the commonness of PTSD is almost twice as high in females as in men. This assertion is contradicted by the current study which found that the prevalence of PTSD is more in males (9.3%) than in females (6.0%). This could be attributed to men being in forefront when it comes to the situation of war or civil conflict.

Further religious background had a significance value of  $0.104 > p > 0.05$  signifying that religious background is not a risk factor to developing PTSD. From the literature review done, religious background does not have literature that supports or contradicts its influence in the development of PTSD.

With regard to educational level of the respondents, the findings indicate that the significance value is  $0.435 > p > 0.05$ , implying that educational level is not a risk factor to developing PTSD. This concurs with the study done by Sekoni et al. (2021) who established that education level, employment and marital status were not associated with PTSD.

Concerning support of school needs, the findings indicate that the significance value is  $0.204 > p > 0.05$ , implying that support of school needs does not influence development of PTSD. However, level of social support according to Eriksson et al., (2013), leads to development of PTSD.

## VI. CONCLUSION

The following are conclusions derived from the study results;

The main types of traumatic events established in this study were death trauma, unfortunate news, robbery, fear of death or injury and forceful threats which were experienced by young adults in selected secondary schools in Lakes State, South Sudan. Traumatic events can include physical, sexual or emotional abuse during childhood or adulthood.

From the research results in this study, those with PTSD symptoms were fewer compared to those without PTSD symptoms among young adults in selected secondary schools in Lakes State, South Sudan. Lack of access to mental health care and prolonged exposure to violence, and armed conflict will have significant bigger impact on the population. Threats are particularly salient in young people, who are exposed to the highest rates of trauma and might be more vulnerable to the effects of stressors due to ongoing neurobiological, emotional, and social development. Exposure to life stressors before the trauma for instant childhood life stressors that are considered by the person as the inciting stressful event have been associated to increase risk to developing PTSD.

## VII. RECOMMENDATIONS

The study recommends to the Ministry of General Education and Instruction of Lakes State Government to enact a policy that guides secondary schools on management of mental health wellbeing of secondary school students. Through the guidelines of such a policy, the government will employ counselors for schools and also offer training to teachers on matters related to mental health wellbeing. The counselors and the teachers will be enlightened on how to recognize symptoms of PTSD and deal with stressors that are precipitating factors.

The study also recommends to counselors in Lakes State and other States that experienced civil strife in South Sudan to engage in supporting victims of traumatic events by offering counseling services to students within the affected regions so as to help students manage these stressful traumatic events.

Additionally, the study made some recommendations for future research; A study to investigate whether there could be other types of traumatic events in other regions of South Sudan with similar population, a study to investigate Post-Traumatic Stress Disorder and Associated Risk Factors among University students, and a study to investigate available Post-Traumatic Stress Disorder coping mechanisms

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