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# Post-traumatic Stress Disorder among Orphans of Boarding School in Jigjiga, Ethiopia: Prevalence and Comorbidity with Depression

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## Abstract

**Objective:** The purpose of the study was to examine the prevalence of Post-traumatic Stress Disorder (PTSD) and its co morbidity with depression.

**Methods:** The researchers employed a cross sectional design quantitative method .To collect data for the present study, socio demographic and child abuse questionnaire and two scales (The University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index Post, (UCLA PTSD Index) and children's depression inventory CDI 2-SR[S] were administered to a sample of 146 males and 38 females that were randomly selected from Jigjiga orphans Boarding School. The data were analyzed using simple descriptive statistics (mean, percentage, and standard deviation), cross tabulation and chi-square.

**Results:** This study showed a relatively high prevalence of PTSD 16.3%. The result also indicated a statistically significance difference between the depressed and none depressed participants in terms of PTSD ( $\chi^2(1)=10.320, p=0.001$ ). However, statistically significance difference was not found between single and double orphans in terms of PTSD. In addition to that, in terms of socio demographic characteristics and PTSD, significant relationship was not found. The same is true when the relationship between PTSD and gender is examined. Besides, among the participants with PTSD symptom male reported more PTSD prevalence (70%) than female (30%).

**Conclusion:** there was higher prevalence PTSD in Jigjiga orphans Boarding School. There was a difference between non depressed and depressed orphans in term of PTSD. Besides, the prevalence of PTSD symptom was higher among male orphans than female orphans. In addition, no statistical deference was found across socio demographic variables in terms PTSD symptom. Therefore, researchers suggested the school principals and administrators to encourage further research to examine the psychology of those orphans, so that their problems can be understood and practical solutions can be made. Moreover, training on counseling service and child psychology should be given to teachers and caregivers, so that they can clearly understand how to deal with the orphan's problem.

**Keywords:** Post-traumatic Stress Disorder (PTSD); Orphans; Boarding school

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## Introduction

Posttraumatic Stress Disorder (PTSD), according to the American Psychiatric Association is an anxiety disorder characterized by a traumatic stress or leaving one to continuously have negative thoughts about the experience and symptoms often appear within three months after a traumatic event, but may be delayed months or even years [1]. Although we have started to hear a lot more about it in recent years,

the condition has been known to exist at least since the times of ancient Greece and has been called by many different names: (e.g., soldier's heart, shell shock, war neurosis, and combat stress reaction). However it was during the 1980s the current name, Posttraumatic Stress disorder (PTSD) became popular. Basically, People with PTSD experience three different kinds of symptoms like; becoming upset when confronted with a traumatic reminder, staying away from places or people that remind you of the trauma, isolating from other people and feeling of irritable, or startling easily [2].

Globally the effect of PTSD among orphans and vulnerable children is devastating. According to Atwoli [3], a study done in war traumatized children in Bosnia and Herzegovina found a PTSD prevalence rate of 51.6%. This study also showed that PTSD rates were high among orphans living with the surviving parent, followed by those who had lost a relative and were living in an NGO-sponsored children's village. Losing both parents was associated with the greatest risk of developing PTSD. This study also indicated that Africa was home to over 53 million orphans from all causes, HIV/AIDS being responsible for nearly 30% of these orphans. In addition to that Posttraumatic stress disorder (PTSD) is common among African orphans and vulnerable children. For example In Rwanda, years after the 1994 genocide, the prevalence rate of PTSD among children orphaned during the genocide and living either in child headed households or in orphanages was 44% [3]. Moreover, it was reported, that in 2007 the rate of PTSD among respondents in northern Uganda was 74%; similarly, a 2004 study revealed that 97% of the respondents met the criteria for the diagnosis of PTSD among former Ugandan child soldiers. It also found even children who escaped from the Lord's Resistance Army (LRA), a group fighting against the Uganda government for many years; have continued to suffer from PTSD-like symptoms several years later [4].

Ethiopia being sub Saharan African country was home of an estimated 5,459,139 orphans of whom 16% were AIDS orphans [5,6]. The study also stated that the challenges and needs faced by orphans and other children made vulnerable by HIV/AIDS are diverse like, psychosocial distress which is mainly associated with anxiety, loss of parental love and nurture, burden of caring for the sick, impact of family dissolution, depression, stigma, discrimination, grief and frustration. Ethiopia has orphans and vulnerable children (OVC) burden. Around 15% of these believed to have been orphaned as a result of HIV/AIDS and the majority of children orphaned as a result of HIV/AIDS are in Amhara (39%), Oromia (22.4%) and SNNPR (14.1%) and the remaining causes of orphan hood and vulnerability are due to food insecurity, poverty, conflict, natural disasters, malaria, and other infectious diseases [7,8].

The problem of orphan hood mentioned in the above paragraphs clearly indicate that orphan hood is universal problem and sub-Sahara Africa is worse than the rest of the world. It also shows that orphans are more vulnerable for many psychological problems when compared to non-orphans. It further indicates how the magnitude of PTSD is serious in orphans in general and war orphans in particular. Orphans and Vulnerable Children (OVC) continue to maintain a spot at the front lines of the international agenda with millions of children worldwide being orphaned or made vulnerable by different problems like HIV/AIDS, wars, and disasters [8]. Sub-Saharan Africa in particular has the highest proportion of children who are orphaned, where more than one in seven children is orphaned because of the above conditions. Besides, orphan children are vulnerable for psychological disorders and especially PTSD which expose them to trauma and daily stress which are strongly associated with depression and anxiety-like symptoms [6].

Despite the large number of orphans in Ethiopia, however, very little is known about what proportion of these children are suffering from PTSD and other psychological disorders [8]. This is one of the factors that initiated the researchers to do this study. Additionally in many cases, war orphan children are neglected and put aside. Yet there has been little research done in Ethiopia and this makes it difficult to get baseline data about PTSD among war orphaned children. The case is the same in Somali regional state of Ethiopia. The situation is worse because no one knows about the magnitude and prevalence of the problem and how serious it is. Moreover, the researcher's abbreviation as a resident of the city, there has been several conflicts between political groups in the region which led to the death of many fathers and mothers. Many of

these orphans have not been treated and have received no care that they deserved. However, it was in 2010 that the regional government has established two Boarding schools in the whole region.

Therefore, this study tried to explore the prevalence of PTSD and its co morbidity with depression among the orphan children in orphan's boarding school, Jigjiga Ethiopia. Specifically it aimed at investigating prevalence of PTSD and its association with depression. In the meantime it examines whether there is statistical significance difference across socio demographic variables and between single and double orphans in terms of PTSD.

## Methods

### Study design

The researchers employed a cross sectional design quantitative method. This design is preferable because the means that the researchers used to obtain information from participants were standardized scales, which were administered at one time. Furthermore, since the site of the research was found in the same city with researcher's university, it helped the researchers to use their time properly and effectively.

### Study area

The study was conducted at Jigjiga orphan's boarding school, which is found in Jigjiga city, the capital of Somali regional state in eastern Ethiopia. Jigjiga is also the zonal city of Fafan zone which consists of 8 woredas. Jigjiga contains 30 kebeles: 20 inside the city and 10 around the city. Jigjiga orphan's boarding school, which is the home of 454 war-orphaned children and located in northwest of the city was established in 2003 E.C. It is the only school in Jigjiga for war orphaned children and the second in the whole region, whereas the other war orphan boarding school is located at Fiq, in Fafan previously called Jigjiga Zone. The school contains classes from grade one to grade 12 with total classes of 15. In each grade, there is one section/class except grades 3, 11, and 12 which has two sections/classes each. Moreover, the study site was selected purposefully because it's the only school of orphaned child in the Jigjiga city administration.

### Population of the study

The populations of this study were 454 war orphaned children in Jigjiga orphans boarding school (Table 1).

### Sample size and sampling technique

The required sample size was determined with a scientific sample size calculator because this technique is very essential to obtain the participants of the study precisely [9]. In terms of the procedure, with 95 percent confidence level and 5 percent degree of precision, the sample size for a population of 454 was 249 (M=193 F=56). The researchers excluded students from grade one (1) to three (3) that contained 174 students, because these students cannot fill the questionnaires. The remaining population was 280 students (38 females and 242 males); because the number of females and males were not proportional the researcher used the table for determining sample size for educational and psychological measurement developed [9] independently for females and males and out of 280 students 184 (146 male and 38 female) were selected for the study.

## Data Collection Instruments

A self-administered structured questionnaire was used for data collection. The questionnaire contained items on socio-demographic characteristics of the participants. The tool was adopted from previous study done in Tanzania. In addition to that, two standardized scales were

**Table 1** Number of orphans in the target population by Grade and sex.

No.	Class	Male (N)	Female (N)	Total
1	Grade One	55	9	64
2	Grade Two	42	7	49
3	Grade Three (A)	24	7	31
4	Grade Three (B)	26	4	30
5	Grade Four	43	11	54
6	Grade Five	29	5	34
7	Grade Six	18	5	23
8	Grade Seven	23	4	27
9	Grade Eight	25	5	30
10	Grade Nine	37	1	38
11	Grade Ten	17	0	17
12	Grade Eleven (A)	9	3	12
13	Grade Eleven (B)	13	3	16
14	Grade Twelve (A)	11	0	11
15	Grade Twelve (B)	17	1	18
<b>Total</b>		<b>389</b>	<b>65</b>	<b>454</b>

Source: Jigjiga orphan's Boarding school academic director office. February, 2018.

used to collect data pertaining to PTSD and depression. The University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index Post, (UCLA PTSD Index) and children's depression inventory CDI 2-SR(S) were used to assess PTSD and depression respectively. The questionnaire as well as the scales was translated in to Somali language and the translation was reviewed and commented by expertise. The researchers considered and refined the instruments as per the suggestions and comments.

The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index for DSM-IV (abbreviated as UCLA PTSD Reaction Index) is a paper and pencil questionnaire that assesses both exposure to traumatic events and post-traumatic stress symptoms amongst children and adolescents [10]. It was used to screen for exposure to traumatic events and for symptoms. The tool constitutes a brief lifetime trauma screen, allowing for categorizing of traumatic exposures including exposure to community violence, natural disaster, medical trauma and abuse. The assessment of the severity of symptoms is based on the frequency of symptoms reported by the child and the minimum points to meet criteria for PTSD are 17. The occurrence of each DSM-IV symptom within the last month is scored on a scale ranging from (zero, none of the time) to (four, most of the time). Thus, an overall PTSD severity score can be calculated by summing the scores for each question, which results in a maximum possible score of 68 [4]. The scale has three parts called (child, adolescent, and parent) but for the purpose of this study, only the child and adolescent versions were utilized. The child and adolescent version together contain 20 items, which assess the frequency of PTSD symptoms that occurred during the previous month, which map onto DSM-IV (1994) criteria B (re-experiencing symptoms), C (avoidance symptoms), and D (hyper arousal symptoms).

The scoring system of the scale (i.e., questions 1 – 20) yields individual sums, which map onto criteria B, C, and D for PTSD of the DSM-IV (1994), which can yield a total severity score for each criterion. If the respondent endorses the appropriate number of symptoms for each symptom subcategory (i.e., at least 1 symptom for re-experiencing, 2 symptom for hyper arousal, and 3 symptoms for avoidance then, the DSM-IV criteria for each subcategory is satisfied). The symptom cut off score for each symptom sub category is greater than or equal to 3 [11]. The total possible score can range from 0 to 68, while the clinical cutoff score is greater than or equal to 38, indicating that the child or adolescent is

likely to be diagnosed with PTSD symptoms as recommended by the authors of the scale.

Regarding reliability and validity, it has been found with internal consistency around 0.90 [10]. The test-retest reliability has also been high, 0.90. In conclusion, the UCLA PTSD Reaction Index has been found to be a reliable tool for conducting needs, assessment, screening, clinical evaluation, and treatment outcome evaluation after a range of traumatic events and in a range of different cultures [10]. The researcher has preferred this scale because it has been used by different researchers.

Children's Depression Inventory 2<sup>nd</sup> Edition: Self-Report Short CDI 2-SR[S] is a 12-item self-report assessment that allows for rapid screening and monitoring of depressive symptoms in children aged 7-17 years to measure depressive symptoms [12]. Respondents are asked to choose one item from a list of three that best describes their situation. Scoring involves assigning a score of 0, 1, or 2 to each statement. The subscale has a maximum score of 24. The internal consistency was found to be high on the 27 item version of the CDI with Cronbach's alpha  $\alpha=0.82$ . For this study the cutoff point used was 6 as the authors recommended [4]. According to Telkamp [13] the Cronbach's alpha values for all forms of the CDI 2 ranged from 0.67 to 0.91. In addition the researcher preferred this scale because this scale includes both children and adolescents. Moreover Reliability and validity have been established over many years of empirical research. The CDI has demonstrated consistent correlations with various syndromes, other scales, and replicated predictive relationships [12].

### Pilot study

The research instruments were pilot tested with 15 orphans in Jigjiga orphans Boarding School. The main objective of the pilot testing was to check whether the items were understandable to participants and to improve or refine if some of the items were ambiguous and/or difficult to understand by the children (Table 2).

## Methods of Data Analysis

Data entry, cleaning and analysis were done using the Statistical Package for Social Science (SPSS) version 20. The demographic characteristics of participants were computed using simple descriptive statistics (mean, standard deviation, frequency and percentage). To assess the prevalence of PTSD frequency and percentages were used. In order to examine the association between PTSD and depression, cross tabulation was employed. In addition, to examine the differences between single and double orphans in terms of PTSD chi-square was used.

## Results

### Socio-demographic characteristics of respondents

Table 3 reveals that almost one-half of the respondents were between 13-16 years (48.4%) and the smallest number of participants was in the range of 17-19 years old (22.3%). In terms of gender, the majority of the respondents were males (73.3%). Besides, the majority of the respondents were single orphans (89.6%). In terms of grade, those attending primary education were more than other grades.

**Table 2** The reliability and validity of the pilot test and main data collection.

Name of the scale	Pilot test reliability	Real data collection reliability
UCLA PTSDLM	0.767	0.894
CDI 2-SR[S]	0.678	0.713

**Table 3** Socio-demographic characteristics of respondents.

Variable	Responses (N=184)	
	N	%
<b>Age</b>		
10-12	54	29.3
13-16	89	48.4
17-19	41	22.3
<b>Total</b>	<b>184</b>	<b>100%</b>
<b>Sex</b>		
Male	146	79.3
Female	38	20.6
<b>Total</b>	<b>184</b>	<b>99.90%</b>
<b>Grade</b>		
4-8	129	70.1
9-10	39	21.2
11-12	16	8.7
<b>Total</b>	<b>184</b>	<b>99.90%</b>
<b>Orphanage status</b>		
Single orphan	165	89.6
Double orphan	19	10.3
<b>Total</b>	<b>184</b>	<b>99.9</b>

**Table 4** The prevalence of PTSD among the respondents.

Variables	N	%
PTSD	30	16.3
<b>Sex</b>		
Female	9	30
Male	21	70
<b>Orphans status</b>		
single orphan	27	90
Double orphan	3	10
<b>DSM-IV criteria for PTSD, N=184</b>		
B re-experiencing	109	59.2
C avoidance	39	21.2
D hyper arousal	54	29.3

### The prevalence of PTSD among orphans

**Table 4** indicated that, the overall prevalence PTSD was 16.3%. In other words, 30 of the students had PTSD symptoms. In terms of sex, 70% were males and 30% were females. Thus the data show that PTSD was more prevalent among male participants than their female counterparts. Among the 30 respondents who had PTSD symptoms, only 10% were double orphans whereas 90% were single orphans. In terms of DSM-IV criteria for PTSD, 109 (59.2%) exhibited criteria B, means the majority of the respondents encountered re-experiencing symptoms.

### The association between PTSD and socio demographic characteristics

**Table 5** shows PTSD was more prevalent (25.9%) among the 10-12 years age group compared to the older age groups (12.2%). In terms of grade level, those in the secondary (9-10) grades had higher prevalence rate (20.5%) when compared with other levels which were 15.5% for grades 4-8 and 12.5% for grades 11-12. Moreover from this table, no significant relationship between PTSD and socio demographic characteristics were found.

### The association of PTSD and depression

As one can observe from **Table 6** above, 94.7% (n=72) of the respondents

**Table 5** PTSD by socio-demographic characteristics.

Socio-demographic variable	PTSD				Chi square	P-value
	Has no PTSD		Has PTSD			
	N	%	N	%		
<b>Age</b>						
10-12	40	74.1	14	25.9	4.857	0.088
13-16	79	87.8	10	12.2		
17-19	36	87.8	5	12.2		
<b>Sex</b>						
Female	29	76.3	9	23.7	1.291	0.256
Male	125	85.6	29	14.4		
<b>Grade</b>						
4-8	109	84.5	20	15.5	0.718	0.698
9-10	31	79.5	8	20.5		
11-12	14	87.5	2	12.5		

**Table 6** The association of PTSD and depression status.

Depression Status	PTSD Symptom				Total	
	No PTSD symptom		PTSD symptom		N	%
	N	%	N	%		
Non-depressed	72	94.70%	4	5.30%	76	41.3
Depressed	82	75.90%	26	24.10%	108	58.7
<b>Total</b>	<b>154</b>	<b>85.30%</b>	<b>30</b>	<b>29.4</b>	<b>184</b>	<b>100.0</b>

who were not depressed, had no PTSD symptoms. From the participants who were depressed, 75.9% (n=82) had no PTSD symptoms whereas 24.1% (n=26) of the depressed students had PTSD symptoms. Statistically significant differences were observed in post-traumatic stress disorder between the depressed and not depressed ( $\chi^2 (1)=10.320, p=0.001$ ). That is, whether one has PTSD or not depends on his/her depression status.

### The difference between single and double orphans in PTSD status

As displayed in **Table 7**, 84.2% (16) of the respondents who had lost both of their parents had not reported PTSD symptoms and only 3 (15.8%) of the double orphans had PTSD symptoms. From the participants who had lost either of their parents, 138 (83.6%) had no PTSD symptoms, whereas 27 (16.4%) of the single orphans had reported PTSD symptoms ( $\chi^2 (1)=1, p=0.625$ ). There is thus no significant relationship between PTSD and orphan hood status of the students (being single or double orphan). That is, PTSD status among the orphans was not significantly associated with the children's single or double orphan hood.

## Discussion

### Prevalence of posttraumatic stress disorder among the respondents

One of the research questions was to determine the overall prevalence of PTSD among orphans in Jigjiga orphans boarding school. Hence, in this research the prevalence of PTSD was found to be 16.3%. However, the prevalence of PTSD in the general adolescent population was reported to be 3% to 6% in Europe as reported by [4]. In addition, another research done by Perry [14] reported a rate of 3% to 14% for adult population and 2% to 5% for adolescents.

Therefore, when the investigator compares children, adolescents as well as the adult population the current prevalence of PTSD among orphans shows that PTSD is more prevalent among orphans than the normal

**Table 7** The difference between single and double orphans in terms of PTSD.

Orphan status	PTSD Symptom					
	No PTSD symptom		PTSD symptom		Total	
	N	%	N	%	N	%
Double orphans	16	84.2	3	15.8	19	100
Single orphans	138	83.6	27	16.4	165	100
Total	154	83.9	30	32.2	184	100

population. This is because orphans in general and war orphans in particular encounter more traumatic events than the other population and this will in turn lead to the development of psychological disorders like PTSD. For example orphans might encounter the death or sometimes the killing of their parent, which is big trauma event. After missing their parent they might face all kinds of life problems like: lack of shelter, food, health, lack of care, and loneliness which are all social problems that can be the cause of psychological problem.

In terms of the prevalence of PTSD among orphans, this finding was nearly consistent with the finding of Tsegaye [8] who studied the prevalence of PTSD among orphans in Ethiopia which was 15%. Although, studies which were conducted to determine the prevalence of PTSD among war orphans were rare in the local context, the prevalence of some other mental health and psychological problems such as; depression and anxiety were studied by Hiwot [15], on Psychological distress and its predictors on orphan adolescents in Addis Ababa city that reported the prevalence of depression (39.1%) and anxiety (40.8%) for a sample of 157 and 164 respectively. A similar study done by Shekmnesh [16] reported that the prevalence of depression (25.3%) for a sample of 74 respondents. This indicates though, they differ in clinical terms, (that is PTSD, depression and anxiety differ in their clinical names though, they all affect human psyche), the prevalence of mental health among orphan children and adolescents is high. The above empirical findings on other mental disorders should not to be compared with the prevalence of PTSD; this is done just to show that there are other mental health disorders.

However, this finding was much less than the prevalence of 51.6% [3] or 50%. Hasanovic [17] found among war traumatized children in Bosnia Herzognia, 28% in the Cameroon [4], 74% by the same author, 22%\_25% Cluver [18] and lastly in Ruwanda genocide 24.1% [19]. This difference could be explained by the fact that, the result found in Ruwanda for example could not be compared to this finding in Somali region because the former was genocide in which many people were killed and many children were orphaned. A census done in 2009 reported that 30,000 orphans of the genocide were living in child-headed households [20], which indicates the magnitude of the event that happened in Ruwanda was devastating.

However, the finding of this study showed that PTSD among orphans is higher than the one found in Zambia by the Swiss Academy for Development, with a rate of 6.1% among orphans in rural Zambia. One explanation for this difference could be that the Zambia rural orphans have been orphaned by diseases like HIV/AIDS rather than violence and war. Children who were orphaned by war and violence are more traumatized than other orphans in the sense that war orphans might have heard their parent killed by certain group of people and sometimes might have seen the killing. I was also told in the research site that one of the orphans has witnessed the death of his mother and drunk her blood. They also sometimes encounter displacement after conflicts which are devastating for humans in general and children in particular. Although HIV/AIDS orphans have lost their parents they have no resentments towards others for the death of their parent, because these orphans have not seen their parent being killed by others rather the death of their parent was caused by the disease.

## Association of PTSD with socio-demographic characteristics

As we have already observed there was no statistically significant relationship between PTSD and socio-demographic characteristics of the respondents. The results indicate no statistically significant difference between males and females in association with PTSD, though higher prevalence of PTSD (70%) for male than (30%) for females was found. This is not consistent with the findings of Ditlevsen [21] who reported in their research on the overall PTSD prevalence for females which was 27.4% and for males 13% with the ratio of 2:1, which shows that PTSD was more prevalent among females than males.

In consistently with the result reported by Tulu [22] in Addis Ababa Kechene Children's Home who reported that female orphans who have experienced rape, domestic violence and sexual abuse are highly vulnerable to PTSD than male orphans. For instance, the result of one study revealed that among 100 orphan children who have experienced sexual abuse and domestic violence, majority (72%) of them females were found to have PTSD when compared to male (28%). However, this study did not show any statistical significant and in this case it is consistent with the current findings [22]. Although there was no any significant relationship between PTSD and age of the respondents, the results indicated that there was higher PTSD symptoms reported in the younger age group, (25.9%) in the 10-12 years age group than older age groups. This is consistent with the findings reported by Dyb [23] which displayed that younger children tend to have more symptoms than older ones.

Following a range of traumatic events, Dyb [23] found that 39% of preschoolers (less than 7 years old), 33% of school-aged children (6-12 years old) and 27% of teenagers (over 12 years old) were diagnosed with PTSD. Stated that the prevalence rates of PTSD did not differ markedly across age groups, which is consistent with the present finding that socio- demographic characteristics of the participants in general and age in particular does not matter in terms of PTSD symptoms. However, it is contrast with the study done by Myovela [4] where older age groups reported more PTSD prevalence than younger age groups. Hence, in this research there was no significant relationship between PTSD and age, rather the way the child is treated by his care givers and the way he/she adapted the new environment was very important.

Besides when children are brought in to new environment, it may be good for some of the orphans who could not get any care giver, or even if they get care givers other basic necessities like; food, health, shelter and education might not be available. On the other hand, some orphans whether young or old may not adapt the new environment after being separated from their remaining relatives or parent and this can differ their way of thinking and development of PTSD symptoms apart from their age. In terms of grades those in the secondary school level reported higher PTSD prevalence compared to those in the other grade levels, which is relatively consistent with the finding of Myovela [4] who reported in his research those in the secondary level had reported more PTSD than other grade levels.

## The association between PTSD and depression

The associations between PTSD and depression have been studied from different and diverse population such as: Military, war victims, prisoners, victims of domestic violence, and those affected by a natural disaster [24]. It is estimated that more than 50% of PTSD co morbidities are accounted for depression. On the other hand, the present finding showed that there was significant difference between the depressed and the no depressed in terms of PTSD. This significant difference shows that respondents who were depressed were more likely to have PTSD symptoms when compared to the non-depressed ones [25].

It also indicates that depression can increase PTSD symptoms and PTSD symptoms like re-experiencing can aggravate depression, in the sense when someone is in a condition of remembering past events that were traumatic, it can lead him/her to feel depressed. This is consistent with the research done by Shah [24], who found a co-morbidity of PTSD and depression with strong correlation ( $r=0.84$ ,  $df=37$ ,  $p=0.001$ ), similarly Shah reported in his findings a significant difference between the depressed and the not depressed in terms of PTSD ( $p=0.04$ ). Even though, it was not done on orphans it is also consistent with the result found by Roberts [26] who reported that PTSD symptoms especially arousal symptoms were significantly associated with depression severity.

Apart from the consistent of the current findings and the one done by Shah [24] and Bleich [25], reported high association rate of PTSD and major disorder, with 70% of those who were depressed had life time PTSD symptoms and 55% had current symptom. Although, they have not reported statistical significance difference between PTSD and depression reported a high association between PTSD and depression in their study in northern Uganda [26] also reported the association between PTSD and depression in different other places in the world, 11.8% in Guatemalan refugees in Mexico, 38%, in Karenni refugees living in the Thai-Burma border, 4.6% and 41.8%, a survey of Bosnian refugees in Croatia diagnosed PTSD and depression 5.6% and 18.6% and lastly in Afghanistan, rates of PTSD have varied between 20.4% to 42% and 38.5% to 68% for depression rate.

The above different findings show that the association between PTSD and depression is significant. Pre-existing depression can increase the susceptibility to the PTSD-inducing effects of traumatic events. Considering these two factors, the possibility of shared symptoms like sleep disturbance, loss of interest and underlying vulnerability to both PTSD and depression can be presumed. It is logical to argue that the traumatic events that lead to PTSD may also increase the risk of depression. However, evidence suggests that incidence of depression after a traumatic event in people who developed PTSD is higher as compared to those who were exposed to trauma but did not develop PTSD [26]. Therefore, it is reasonable to conclude that PTSD may cause depression or these two disorders share a common underlying vulnerability and symptoms like the ones mentioned above.

## The difference between single and double orphans in terms of PTSD

As mentioned in section four of the paper there was no any statistical significance difference between single and double orphans in terms of PTSD. This shows that being single or double orphan was not a big deal

in this study finding, rather what matters was how the child perceived after becoming orphan, how he was treated, his/her ability of coping, the environment he/she lived and his/her emotional control as the researcher can understand from the study finding.

Besides, the number of the single orphans who had PTSD symptoms ( $n=27$ ) were larger than the number of the double orphans ( $n=3$ ), yet the percentage of the prevalence of PTSD was 15% for double orphans and 16% for single orphans which indicates PTSD prevalence among single orphans and double orphans were so close. This contrast the result found in Tanzania by Myovela [4] in terms of both the percentage and statistical significance, because the previous research found significant difference between single and double orphans in terms of PTSD ( $p<0.002$ ).

It also contrasts with findings of Whetten [27] reported that double orphans to be the most vulnerable children and most negatively affected by repeated exposure to potentially traumatic events. Possible explanation why some of the current findings were different from the previous finding could be attributed, according to the researchers' opinion, to different factors. Firstly, in the Somali culture orphan children are looked after by their relatives and the remaining parent if there are. Apart from that cultural protection since double orphans are thought to be more victimized than single orphans, they are kept well which can compromise/composite them to feel better, though the reality of orphan hood is there. This does not mean that single orphans are not protected well or other cultures do not look after orphans. Secondly, an orphan child might not be insulted or beaten and if that happens the surrounding community will not be silent, because they believe that they will be punished by Allah if they violate the rights of the orphans. The surrounding people may provide rather clothes during festivals, food during Ramadan and may donate money to the organization. Thirdly, the level of trauma those different orphans encountered is also important, because some orphans might have witnessed the death of their whole family, while others might have heard the death of one of their parent. This can create difference in the level of the trauma that these different orphans encountered. In summary though, there can be other factors that can cause the differences between the current study finding and the previous research findings, the above ones is what the researcher thought to be the root cause.

## Conclusion

A relatively high prevalence of PTSD (16.3%) was found among orphans in Jiggiga orphan's Boarding School. Moreover, apart from the prevalence of PTSD, depression was found to have significant relationship with PTSD. In contrary to this, double and single orphans had not showed any significance difference in terms of PTSD. And according to this finding, no significant difference was found across socio demographic variables in terms PTSD.

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