

PREVALENCE OF POST-TRAUMATIC STRESS DISORDER AND DEPRESSION AMONG BEREAVED ADOLESCENTS IN SELECTED CHILDREN'S HOMES IN KAJIADO, KENYA.

Sheba Atieno Okumu

Department of Psychology and Counseling, Daystar University, Nairobi, Kenya

ABSTRACT

Prevalence has been defined as the proportion of people in any given population who have the symptoms of any disorder. Previous studies on population of adolescents aged 12-17 years found that those who had Post traumatic stress disorder (PTSD) almost had the same percentage of major depression disorder (MDD). Some studies found out that 80% of individuals with PTSD are more likely to have MDD. Effects of traumatic experiences are most devastating when adolescents have to endure repetitive and prolonged stress during development which is worsened by bereavement. This study sought to identify the prevalence of PTSD and Depression among bereaved adolescents living in the children's homes. The study took place in 8 children's homes in Kajiado County, Kenya. The sample size was 154 bereaved adolescents aged 12-18 years. All the respondents provided informed consent. Respondents were administered a socio demographic questionnaire which captured the age, gender, level of education, and respondents status of significant others among other details. University of California Loss Angeles (UCLA) Post Traumatic Stress Disorder Reaction Index was used to identify the respondents who had developed PTSD. Respondents who had symptoms of moderate PTSD were 104 (65%) while 30 (18.75%) had severe PTSD. Respondents who had symptoms of mild PTSD were 20 (12.5%) while 6 (3.75%) had minimal symptoms of PTSD. This showed that more than half of the respondents had moderate symptoms of PTSD while a small number had severe and mild PTSD. In addition Children's Depression Inventory (CDI) was used to assess depression. At base-line, adolescents aged 12-14 years had depression mean scores of 2.84, at mid-line 2.50 and at end-line 1.93. Adolescents aged 15-18 years had a depression mean of 2.75 at base-line, 2.46 at mid-line and 1.83 at end-line. Bereaved adolescents living in Children's Homes represent a vulnerable group in terms of mental health including PTSD and MDD due to their traumatic experiences.

Keywords: prevalence, narrative exposure therapy, post traumatic stress disorder, depression, bereaved, adolescents, children's home, Kenya.

1. INTRODUCTION AND BACKGROUND

Gradus (2013) defines prevalence as the proportion of people in any given population who have the symptoms of any disorder. Prevalence explains the number of people who have any disorder in a group. A study on a population of 2000 adolescents aged 12-17 years found that those who had PTSD also had almost the same percentage of MDD (Adams, et al., 2015). According to APA (2013), 80% of individuals with PTSD are more likely to have MDD. Individuals who suffer from PTSD and MDD have typically been exposed to multiple traumatic stressors such as assaults or repeated incidences of familial violence including abuse, neglect, and social rejection. Posttraumatic stress disorder and MDD symptoms often occur together following traumatic events and they often usually overlap (Norman, et al., 2011). Effects of traumatic experiences are most devastating when the child or adolescent has to endure repetitive and prolonged stress during development which can be worsened by bereavement (Ruf, et al., 2010; Schauer, Neuner, & Elbert, 2011; Schauner, Nuener, & Thomas, 2015).

Those who suffer PTSD usually encounter impairment in social, interpersonal, physical, education and occupational undertakings as those with depression (APA,2013). Bereaved adolescents with PTSD can develop sleep disturbance, irritability, withdrawal, and poor school performance (Talitwala, 2011).

A recent survey that was carried out in twelve European countries noted that the prevalence of PTSD varies from one country to another due to several factors (Andrea, 2014). The study put the range of prevalence at 0.5% to 6.67% in the general population but did not highlight it among bereaved adolescents. It ascribed the differences of PTSD prevalence to levels of trauma exposure and other factors. It noted other factors of prevalence to historical, societal, and cultural influences.

Another study on PTSD in USA noted that in a sample of 10,000 adolescents between ages 13-18 years had a 5% lifetime prevalence of PTSD (Merikangas, et al., 2010). In Europe, Asia, African, and Latin American countries it is observed to be 0.5%-1.0% (American Psychiatric Association, 2013). The prevalence rate has also been reported to be 8.7% in children and adolescents over the last 75 years while 3.5% in adult population was observed over the same period (American Psychiatric Association, 2013).

Researchers attempting to determine the prevalence of PTSD among adolescents in United States of America (USA) found out that 30% with PTSD were due to child abuse (Child Traumatic Stress Network, 2013). The same study noted that 65% developed PTSD due to neglect, while 18% due to physical abuse, 10% due to sexual abuse, and 7% due to psychological abuse.

Despite the prevalence of PTSD among adolescents, there was very little information on its prevalence due to bereavement especially among those in foster care institutions.

A study conducted by Piyasil et al. (2011) in Indonesia found the prevalence of PTSD among adolescent survivors of a tsunami to be 7.6% after a period of 3 years. Another study that was done 6 months after Athens earthquake in 1999 found that 86% of survivors had PTSD symptoms (Giannopoulou et al. 2006).

A study conducted by O'Donnel et al. (2014) in Tanzania found that younger children showed higher PTSD symptoms at $t(62) = 2.15, p=.036$, and depression, $t(62) = 3.66, p<.001$, than older children. The study which was conducted among 64 orphaned children in Tanzania found that children living in urban areas had significantly higher symptoms of post-traumatic stress and depression than children living in rural areas (O'Donnel et al., 2014).

In a study conducted in Western Kenya among 1565 orphaned children, the prevalence of PTSD among street children was 28.8%, households 15% and among children living in Charitable children's institutions was 11.5% (Morantz, Cole, Ayaya, Ayuku & Braitstein, 2013).

In understanding gender differences in PTSD prevalence and manifestation, a study conducted on bereaved adolescents after the Spitak earthquake found that girls had higher PTSD and depression scores than boys (Mean CPTSD-RI scores: 35.9 ± 11.3 vs. 29.3 ± 10.1 ; $p < 0.04$) (Goenjian, Walling, Steinberg, Roussos, Goenjian, & Pynoos, 2009).

In summary younger adolescents tend to have higher symptoms of depression than older adolescents; females had greater symptoms of depression compared to males. Adolescents living with guardians had greater symptoms of depression than those living with both parents (Maharaj et al., 2015).

2. METHODOLOGY

The study was conducted in 8 children's homes in Kajiado County, Kenya. The study enrolled 160 boys and girls aged 12-18 years with a mean age of 14.27 (SD ± 1.79). The respondents were also bereaved and living in the children's home. Another inclusion criterion was to have PTSD symptoms hence 6 respondents did not meet the inclusion criteria, while 154 did. Necessary approvals were sought and provided. Adolescents aged below 18 years provided assent to participate in the study while those aged 18 years provided informed consent prior to participating in the study.

The researcher used holders of Master's degree in counseling psychology research assistants to administer the socio demographic questionnaires, UCLA Post Traumatic Stress Disorder (PTSD)

Reaction Index, and Children's Depression Inventory (CDI). UCLA PTSD Reaction Index had been translated into English and Kiswahili.

UCLA PTSD Reaction Index is a standardized psychological testing instrument. It is a paper and pencil test that identifies PTSD symptoms among children and adolescents (Steinburg, Brymer, Decker, & Pynoss, 2014). The new DSM-5 version of UCLA PTSD Reaction index for DSM-IV (Adolescence Version) is a semi structured interview tool that assesses trauma history and the full range of DSM-5 PTSD diagnostic criteria among school-aged children and adolescents (Steinburg, Brymer, Decker, & Pynoss, 2014).

The reliability of UCLA PTSD Reactive index was tested in Nigeria with two samples. In both samples it was found to be adequate with .88 and .89 reliability which was considered excellent. In the same test the validity showed a positive correlation with PTSD. The relationship provided a strong construct validity evidence for UCLA PTSD Reaction Index (Milot, et al., 2013).

Data analysis was done using Statistical Package for Social Sciences (SPSS) software version 20. Frequencies and percentages of traumatic events experienced by adolescents were calculated to establish how many adolescents had experienced traumatic events. Further, the types of traumatic events that bereaved adolescents had experienced were identified.

Children's Depression Inventory (CDI) was used to assess depression which is a common disorder comorbid with PTSD (Creamer, Burgess, & McFarlane, 2011). It was a better option than any other tool because bereavement is often associated with severe depressive episode, particularly in adolescents (David & Tomb, 1995). The tool was developed by Maria Kovacs based on Becks Depression Inventory (BDI) in 1977 (Kovacs, 2004). It has since been repeatedly shown to be a valid screen for depressive symptoms in children and adolescents in different cultural backgrounds worldwide (Khasakhala, Ndetei, Mathai, & Harder, 2013).

The tool was designed for self-rating of depressive symptoms in children and adolescents. CDI has 27 items quantifying several symptoms. The items are scored from a range of 0-2. For each item the adolescent has three possible answers; 0 indicating an absence of symptoms, 1 indicating mild symptoms, and 2, definite symptoms. The total score can range from 0-54. Cut off points for CDI are 0-9 Normal, 11-26 Mild depression, 27-40 Moderate depression, 41-54 Severe depression (Kovacs, 2004).

The data was analyzed descriptively and inferentially with the help of IBM SPSS statistical software version 20 using descriptive, univariate, bivariate, multivariate and multimodal (visual communication) analysis. Descriptive statistics such as proportions were employed to establish the prevalence of PTSD and Depression among bereaved adolescents.

3. RESULTS

The study had 154 respondents who gave informed consent or assent and met the inclusion criteria. *Table 1* presents the frequency and percentage based on socio demographic characteristics of respondents at base-line. Respondents were aged 12-18 years with a mean age of 14.27 (SD ±1.79). Respondents who were aged 12-14 years were 95 (61.7%) while those who were aged 15-18 years were 59 (38.3%). This showed that there were more respondents who were aged 12-14 years as compared to those who were 15 years and above. There were 39 (25.3%) males and 115 (74.7%) females. This indicated that the study had more female than male respondents. Respondents who were protestants were 70 (45.5%), Catholics were 35 (22.7%), SDA were 18 (11.7%), Muslims were 2 (1.3%) and others were 29 (18.8%). This showed that a large number of respondents were protestants.

Table 1: Socio-Demographic Characteristics of Respondents at Base-line

Variable	Frequency N=154	Percentage %	Mean	Std. Dev
Age			14.2662	1.78974
12-14	95	61.7%		
15-18	59	38.3%		
Gender				
Male	39	25.3%		
Female	115	74.7%		
Religion				
Catholics	35	22.7%		
Protestants	70	45.5%		
SDA	18	11.7%		
Muslim	2	1.3%		
Others	29	18.8%		
Academic Performance				
Poor	10	6.5%		
Below average	35	22.7%		
Average	60	39.0%		
Above average	28	18.2%		
Excellent	18	11.7%		
Exemplary	3	1.9%		
Family Residence				
Urban	42	27.3%		

Rural	51	33.1%
Semi-rural	61	39.6%
Family set-up		
Parents live together	13	8.4%
Parents separated/single	40	26.0%
Live with guardian/ orphaned	101	65.6%
Economic Status		
Poor	59	38.3%
Below average	43	27.9%
Average	40	26.0%
Above Average	7	4.5%
Affluent	5	3.2%

Table 4.2 presents the distribution of inter-group socio demographic characteristics of the respondents at base-line. The findings showed that 46 (29.9%) respondents in the experimental group and 49 (31.8%) in the control group were aged 12-14 years. On the other hand, 32 (20.8%) respondents in the experimental group and 37 (17.5%) in the control group were aged 15-18 years. Chi square test showed that there was no statistically significant difference ($p=.483$) in the respondents ages in the experimental group and control group. In regard to gender, 17 (11.0%) respondents in the experimental group and 22 (14.3%) in the control group were males while 61 (39.6%) in the experimental group and 54 (35.1%) in the control group were females. Chi square tests showed that there was no statically significant difference ($p=.308$) in the sex of respondents in the experimental and control groups.

Table 4.3: Prevalence of PTSD among Bereaved Adolescents at Base-line

Specifications	Frequency N=160	Percentage %
Minimal	6	3.75%
Mild PTSD	20	12.5%
Moderate PTSD	104	65%
Severe PTSD	30	18.75%

Table 4.3 presents the frequency and percentage of respondents PTSD scores among 160 respondents who were administered the UCLA at base-line. Respondents who had symptoms of moderate PTSD were 104 (65%) while 30 (18.75%) had severe PTSD. Respondents who had symptoms of mild PTSD were 20 (12.5%) while 6 (3.75%) had minimal symptoms of PTSD.

This showed that more than half of the respondents had moderate symptoms of PTSD while a small number had severe and mild PTSD. However, the 6 respondents whose scores showed minimal symptoms of PTSD, their symptoms were within the normal range hence they were considered not to be having PTSD.

The study sought to identify the distribution of symptoms of PTSD on the basis of socio demographic characteristics.

Table 4.4: Mean Scores of PTSD as per Socio Demographic Characteristics at Base-line

Variables	N	PTSD at Base-line	PTSD at Mid-line	PTSD at End-line
Age				
12-14	95	3.0737 (.55048)	2.5684 (.64664)	2.2105 (.88600)
15-18	59	3.0508 (.59953)	2.5424 (.56697)	2.0508 (2.1494)
Gender				
Male	39	2.8974 (.59802)	2.5897 (.49831)	2.3077 (.65510)
Female	115	3.1217 (.54849)	2.5478 (.65217)	2.0957 (.94566)
Academic Performance				
Poor	10	3.0000 (.66667)	2.7000 (.48305)	2.4000 (.84327)
Below Average	35	3.0571 (.59125)	2.8286 (.51368)	2.4571 (.74134)
Average	60	3.1167 (.52373)	2.5333 (.62346)	2.0833 (.90744)
Above Average	28	3.1071 (.49735)	2.3929 (.73733)	2.0350 (.99934)
Excellent	18	2.8333 (.70711)	2.3333 (.48507)	1.8333 (.78591)
Exemplary	3	3.3333 (.57735)	2.3333 (.57735)	2.0000 (1.00000)
Family Residence				
Urban	42	3.1429 (.52132)	2.4048 (.66478)	1.8095 (.86216)
Rural	51	3.1176 (.62119)	2.6078 (.63493)	2.2157 (.92334)
Semi Urban	61	2.9672 (.54672)	2.6230 (.55269)	2.3279 (.81079)
Family Set-Up				
Parent live together	13	3.0769 (.75955)	2.9231 (.86232)	2.6154 (1.12090)
Parents Separated	40	3.0500 (.63851)	2.4750 (.64001)	2.1000 (.84124)
Live with Guardian	101	3.0693 (.51493)	2.5446 (.55722)	2.1089 (.85908)

Economic Status				
Poor	59	3.0000 (.52523)	2.6441 (.51738)	2.1864 (.88033)
Below Average	43	3.0465 (.57543)	2.5116 (.59250)	2.2326 (.78185)
Average	40	3.2000 (.56387)	2.5000 (.67937)	1.9500 (.93233)
Above Average	7	2.7143 (.75593)	2.2857 (.75593)	1.8571 (1.06904)
Affluent	5	3.4000 (.54772)	2.8000 (1.09545)	3.0000 (.70711)

Table 4.4 presents PTSD mean scores according to socio demographic characteristics of respondents at base-line. Adolescents aged 12-14 years had PTSD mean scores of 3.07 at base-line, 2.57 at mid-line and 2.21 at end-line. Adolescents aged 15-18 years had PTSD mean scores of 3.05 at base-line, 2.54 at mid-line and 2.05 at end-line. These findings indicated that younger adolescents had higher PTSD mean scores at base-line, mid-line and end-line when compared to older adolescent respondents. Males had PTSD mean scores of 2.89 at base-line, 2.59 at mid-line and 2.31 at end-line while females had PTSD mean scores of 3.12 at base-line, 2.55 at mid-line and 2.09 at end-line. These findings indicated that females had a higher PTSD mean score at base-line.

The study also sought to determine the prevalence of PTSD comorbidity (depression) scores at base-line as seen in *Table 4.5*.

Table 4.5: Prevalence of Depression Scores at Base-line

Specification	Frequency	Percentage
Normal	14	8.75
Mild depression	37	23.13
Moderate depression	86	53.75
Severe depression	23	14.37

Table 4.5 presents the depression scores of bereaved adolescents also presenting with PTSD at base-line. Respondents with moderate depression were 86 (53.75) while those with mild were 37 (23.13%). Respondents with severe depression were 23 (14.37%) while 14 (8.75%) had minimal symptoms of depression. This indicated that majority of respondents (91.25%) had symptoms of depression at base-line which was comorbid with PTSD.

The study sought to determine the mean scores of depression as per socio-demographic characteristics of respondents at base-line.

Table 4.6: Respondents' Depression Scores as per Socio Demographic Characteristics

Variable	N =	Depression at	Depression at	Depression at
	154	Base-line	Mid-line	End-line
Age				
12-14	95	2.8421 (.78977)	2.4947 (.72748)	1.9263 (.92532)
15-18	59	2.7458 (.68464)	2.4576 (.67778)	1.8305 (.83362)
Gender				
Male	39	2.9744 (.66835)	2.6154 (.71139)	2.1282 (.95089)
Female	115	2.7478 (.77055)	2.4348 (.70251)	1.8087 (.85733)
Academic Performance				
Poor	10	2.6000 (.69921)	2.5000 (.70711)	2.3000 (.82327)
Below Average	35	2.8000 (.67737)	2.6571 (.63906)	2.3429 (.90563)
Average	60	2.8333 (.78474)	2.4833 (.74769)	1.9000 (.89632)
Above Average	28	2.7500 (.79931)	2.2857 (.71270)	1.3571 (.62148)
Excellent	18	2.8889 (.75840)	2.4444 (.70479)	1.6667 (.76696)
Exemplary	3	3.0000 (1.00000)	2.3333 (.57735)	1.3333 (.57735)
Family Residence				
Urban	42	2.8810 (.70546)	2.5000 (.59469)	1.5238 (.74041)
Rural	51	2.6863 (.90532)	2.3137 (.76132)	1.8039 (.82510)
Semi Urban	61	2.8525 (.62812)	2.6066 (.71365)	2.2131 (.93300)
Family Set-Up				
Parent lived together	13	2.2308 (.92681)	2.0769 (.86232)	1.7692 (.92681)
Parents Separated	40	2.9750 (.73336)	2.5500 (.59700)	1.8250 (.81296)
Lived with Guardian	101	2.8119 (.70303)	2.5050 (.71587)	1.9307 (.91932)
Economic Status				
Poor	59	2.7458 (.73328)	2.4915 (.75139)	2,1017 (.92279)
Below Average	43	2.8372 (.72145)	2.5349 (.63053)	1.9070 (.92102)
Average	40	3.0250 (.69752)	2.5750 (.67511)	1.6500 (.83359)
Above Average	7	2.4286 (.97590)	1.8571 (.69007)	1.5714 (.53452)

Affluent	5	2.0000 (.70711)	2.0000 (.70711)	1.6000 (.54772)
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Table 4.6 presents respondents' depression mean scores at base-line, mid-line and end-line as per the socio demographic characteristics. At base-line, adolescents aged 12-14 years had depression mean scores of 2.84, at mid-line 2.50 and at end-line 1.93. Adolescents aged 15-18 years had a depression mean of 2.75 at base-line, 2.46 at mid-line and 1.83 at end-line. This indicated that younger adolescents had higher depression mean scores than older adolescents at base-line, mid-line and end-line. Males had a depression mean of 2.98 at base-line, 2.62 at mid-line and 2.13 at end-line while females had a mean of 2.75 at base-line, 2.43 at mid-line and 1.81 at end-line. This indicated that males had a higher mean in depression mean scores than females at base-line, mid-line and end-line.

4. DISCUSSION

The study sought to establish the prevalence of PTSD and its comorbidity (depression) among bereaved adolescents. Respondents who had symptoms of moderate PTSD were 104 (65%), severe PTSD were 30 (18.75%), mild PTSD 20 (12.5%) while 6 respondents (3.75%) had minimal symptoms of PTSD. The prevalence of PTSD was 96.25% at a cutoff point of mild PTSD and above. Our study finding was higher than some previous surveys that found the prevalence of PTSD to be between 0.5%- 6.67% in the general population (Andrea, 2014). This was expected because adolescents in the general population would have lower prevalence of PTSD as they were expected to have experienced less traumatic events compared to bereaved adolescents living in institutions. Bereaved adolescents go through the trauma of bereavement which leaves them vulnerable to other traumatic events like neglect and abuse among others. Bereavement is a severe stressor in itself that typically incites painful and devastating traumatic experiences.

5. CONCLUSION

These study findings are relevant in understanding adolescents who have been bereaved and are living in children's homes. The findings showed that bereaved adolescents had symptoms of PTSD as those with moderate PTSD were 104 (65%), 30 (18.75%) had severe PTSD, 20 (12.5%) had mild PTSD while 6 (3.75%) had minimal symptoms of PTSD. Further, bereaved adolescents with PTSD also presented with symptoms of depression as respondents with moderate symptoms of depression were 86 (53.75) while those with mild symptoms of depression 37 (23.13%). Respondents with severe symptoms of depression were 23 (14.37%) while 14 (8.75%) had minimal symptoms of depression.

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