CHAPTER 4

4. Results

4.1 Introduction

PTSD has been one of the most studied areas of psychiatric disorders in the last two decades. Prior to that there had been a lot of description of the disorder without the full understanding of its nature. As a result there had been a number of terms used to explain the symptoms of the disorder. Much of the understanding of PTSD symptoms and how it manifests in both adults and children was subsequently gained as more research focused on the disorder. The inclusion of the term PTSD in the third edition of the DSM publication in 1980 helped in the acceleration of more research and thus more information regarding the nature of posttraumatic symptoms.

As more data became available on the nature and development of PTSD it became apparent that studies on children's reactions to trauma were neglected. Consequently, debates abound regarding how posttraumatic symptoms manifest in children and whether children do suffer from PTSD as do adults. As more information became available regarding children and PTSD, it was finally agreed that children do react to traumatic events in ways that could be diagnosed as PTSD. It also transpired that while information was gathered concerning the way children react to trauma there was never an interest in determining the prevalence of PTSD in young and preadolescent children.

The aim of the current study was therefore to assess the presence and prevalence of PTSD in children, particularly in a black South African community. Data generated from this study were entered into a statistical software programme and different results were produced and discussed according to the different hypotheses of the study. The main hypothesis driving this study was that PTSD would be found to be highly prevalent in a sample of preadolescent school children in a black community. A number of other more salient hypotheses are also presented in this research report. These hypotheses mainly sought to differentiate how factors such as gender, age and the location of schools would have bearing on how children react to traumatic events.

A sample of preadolescent school children were administered the When Bad Things Happen (WBTH) scale used for the diagnosis of PTSD in children. It was developed in 1991 and is based on the DSM-III and DSM-IV criteria. Each criterion group yields different scores to give the measure of intensity of the symptoms.

Table 4.1: Summary of the description of the WBTH scale

Age range	7-14
Reading level (minimum)	3rd grade
Setting	Clinical and research
Scoring type	0, 1 & 2 or Never, Some & Lots
Symptom/Criterion check	Yes, No
Score range (PTSD)	0- 116

4.2 Scoring and Statistical Procedure

4.2.1 Scoring

The WBTH is scored according to either DSM-III-R or DSM-IV criteria. Each item can be scored either as Yes/No or as 0-2. It yields 22 scores. Each item, depending on the direction of the rule is scored 2 if checked “Yes” and items checked “Some” receive the score of 1 while “No” is scored 0. Scores of a selected number of items give a total score of a symptom. Thus 58 items give scores for 17 symptoms. The symptoms are then added up to provide four criterion scores. The total PTSD score is obtained by adding together all the criterion scores (that is Criterion A to Criterion D).

Criterion A, which measures exposure to extreme stressful events, is assessed by 4 items thus giving a maximum score of 8. If one item is checked “Yes” it receives a score of 2 and the criterion is checked “Yes”. However, two scores of “Some” also give a total of 2 but do not warrant the symptom to be checked “Yes”. The higher score indicates the measure of intensity of the event and how the child subjectively appraised it. Score of 0 (Zero), however, does not indicate the absence of traumatic event.

Criterion B, re-experiencing the trauma, is measured by 5 (B1-B5) symptoms comprising 16 items with the maximum score of 32. The criterion is checked “Yes” if one or more symptoms are checked “Yes”. On the other hand a symptom is checked “Yes” if at least one item is scored 2.

Criterion C, the avoidance or denial of the experience or its reminders, which is measured by 7 symptoms (C1-C7) comprising 23 items, is checked “Yes” when three or more of the symptoms are checked “Yes”. Each symptom is checked “Yes” if one or more items are checked “Yes”. This criterion carries a maximum score of 46.

Criterion D, symptoms of over arousal, can only be checked “Yes” when two or more of the five symptoms (D1-D5) that are in turn measured by 15 items are checked “Yes”. Like all the other criteria, a symptom is checked “Yes” when a score of 2 is obtained from at least one item. The maximum score for this criterion is 30.

For a definitive diagnosis of PTSD to be made two additional criteria, that is Criterion E (duration of symptoms should not be less than a month) and Criterion F (the disturbance causes clinically significant distress and dysfunction), have to be met. Available data on these criteria allows for better diagnosis for clinicians and analysis for researchers.

The WBTH scale included questions to assess Criterion A to D. It did not however include Criterion E and F. Fletcher (1996) suggested that an additional checklist should be included in the administration of questionnaire to assess both the duration and the impact of the symptoms (i.e. Criterions E & F respectively). Due to limitations such as the researcher not being allowed enough time to administer questionnaires it was not possible to include another instrument in the administration. Two questions were, therefore, included in the questionnaire by the researcher to assess these two criteria.

The inclusion of these extra questions was mainly due to the DSM-IV requirement that the duration of the disorder should not be less than a month and that they should cause significant social and occupational dysfunction. The two criteria are crucial in facilitating the accurate diagnosis of PTSD and to differentiate it from other disorders. These questions did not possess any psychometric qualities and were not standardised. However, they provided important information concerning the duration of children's symptoms and how they were affected by these symptoms. These questions were also included in the scoring process in order to enable the researcher to make a diagnosis. It is, therefore, important to note that to a larger degree the "definitive" diagnosis of PTSD was based on meeting these two criteria.

Most of the children met Criterion A to D but did not receive the PTSD diagnosis as they failed to meet Criterion E and/or F. This maybe problematic considering that the definitive diagnosis of PTSD in these children depended on them meeting the criteria that are not standardised and had no psychometric properties.

4.2.2 Statistical procedures

As this was a prevalence study, analysis of the results was performed using mainly descriptive statistical techniques. This yielded results on the frequency of relevant variables such as the prevalence and presence of the disorder. Results of other characteristics such as gender differences in the exposure and reaction to trauma were also analysed. Data was entered into the SPSS software programme for analysis. Each hypothesis was then analysed and interpreted separately.

The first hypothesis states that the prevalence of PTSD in a sample of learners in the black township would be found to be high. It was assessed in terms of the frequency distributions. This looked at distribution of the sample in terms of gender, school and school grade. The frequency of exposure to traumatic events and PTSD diagnosis were also reported. Also reported was the frequency of number of incidents reported according to gender. It was also important to identify the victim as reported by the learners. This is helpful in determining the risk level children are exposed to and to understand the factors mediating the development of PTSD.

The second hypothesis stated that the frequency of exposure to stressful events would be much greater for boys than girls. This was analysed using a two-tailed sample *t*-test. It was hypothesised that boys would be more exposed to stressful events than girls. The aim of the study was to analyse the differences between boys and girls in terms of their vulnerability to stressful events. The difference in proportion of boys and girls exposure to extreme stress according to whether they met Criterion A was calculated. A comparison of the frequency of those who met the Criterion B, C, and D was also made.

The third hypothesis, that the severity of PTSD symptoms was related to gender, assessed the relationship between gender and the total PTSD score. A two-tailed *t*-test was used to analyse and assess the significance of the differences in the relationship between gender and PTSD.

The last hypothesis, that there would be no significant difference found in the frequency of PTSD across different schools, was tested using the analysis of variance (ANOVA) between different schools in the area. A post hoc analysis of the differences was made to assess where the differences lay and an attempt was made to provide the explanation for these differences.

4.3 Analysis of Results

As indicated above, different tools were employed to analyse the four hypotheses guiding the conduct of this research. This section will graphically highlight the results of the analysis of the above hypotheses. For ease of reading the results of these hypotheses will be shown separately.

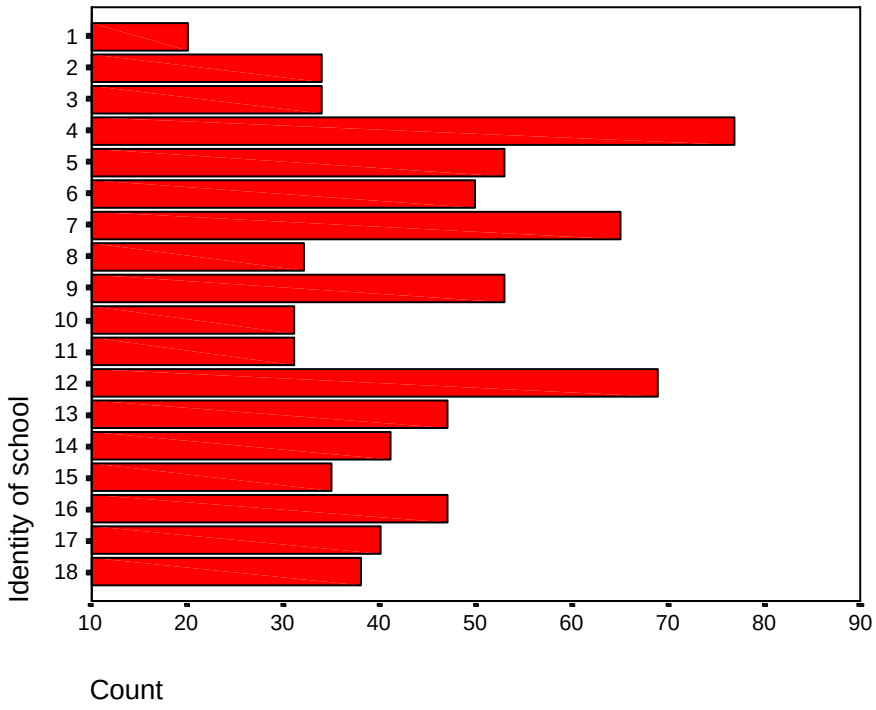
4.3.1 General Description of the sample

Figure 4.1 shows that more children come from schools 4 and 12 with more than 70 children per school. School 7 also had high number of learners with more than 60 children. The first school to be sampled yielded the least number of children (n= 20). The schools were as a result very unequally represented in the study.

The schools where the children's distributions are lower (i.e. n= 40 or less) are the ones where the researcher administered questionnaires without the help of the assistant. Also, some schools made available more learners than the researcher anticipated, with some providing even younger and/or older children than requested. A number of learners were as a result excluded from the analysis. School grade was,

however, not used as an exclusion factor, for as long as learners fell within the stipulated age confines they were included in the administration of questionnaire regardless of their respective grades.

Figure 4.1: The distribution of learners across schools.



875 children were administered the questionnaire, but incomplete questionnaires and over/under-aged sample were excluded in the analysis, thus leaving 797 valid questionnaires. Figure 4.2 shows that 439 girls and 358 boys participated in the study, that is 55.1% girls as opposed to 44.9% boys. Both genders were therefore well represented despite the removal of some questionnaire from the final analysis.

Figure 4.2: The number of learners included in the study by gender.

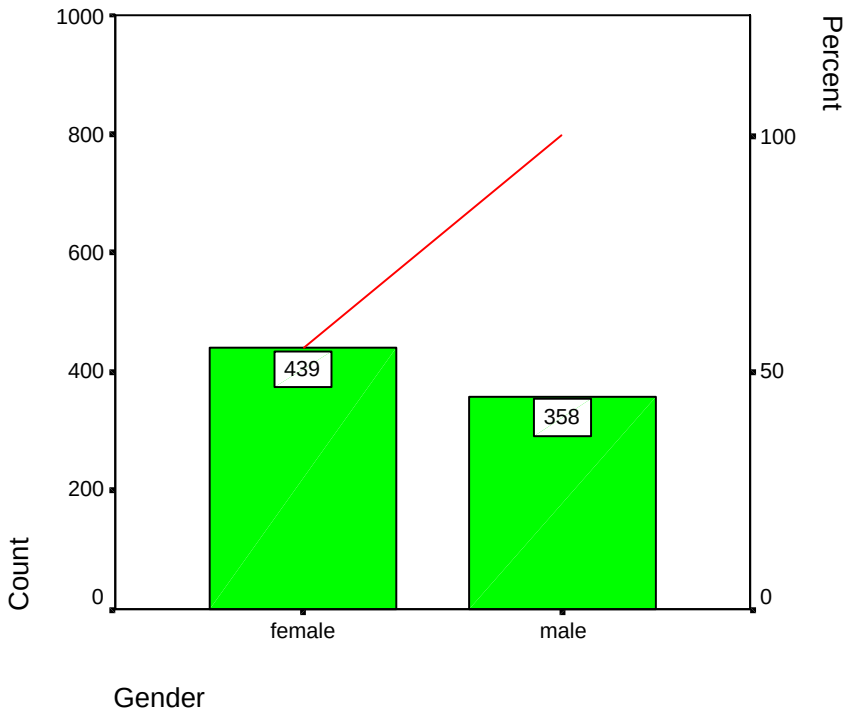


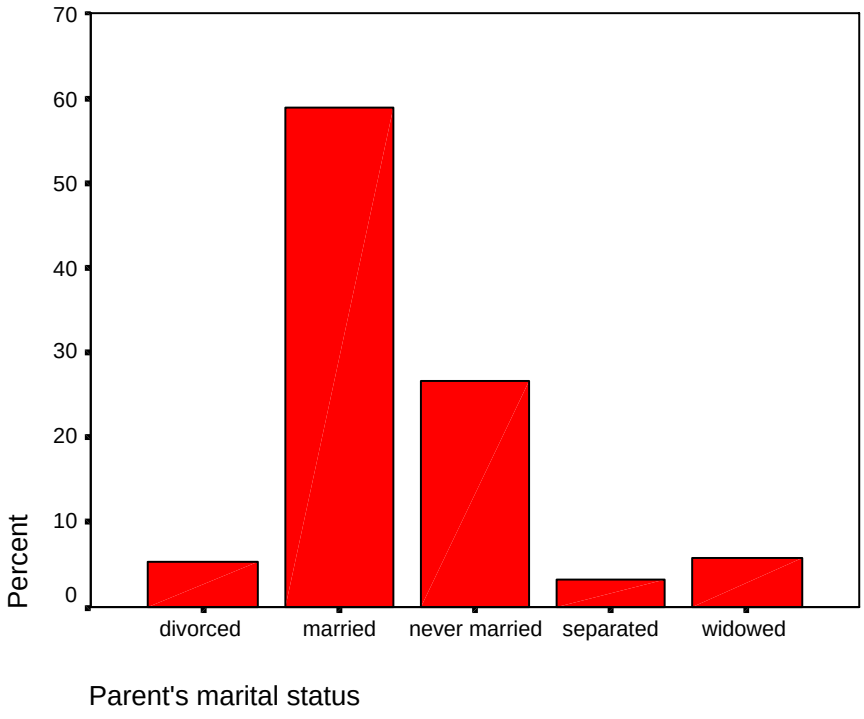
Table 4.2 shows the distribution of learners by grades. It illustrates the normal distribution of learners per grade. It is clear that grades 4, 5, 6, and 7 are well represented with grade 5 as a mode. Only 2.2% of children come from grades 3 and 8. This representation makes sense considering the age groups within which these learners fall. This also means that the children would normally be exposed to similar experiences at schools. They may, however be exposed to different experiences once they are outside of the school premises. Girls would also tend to be exposed to different events to boys.

Table 4.2: The distribution of learners by grade.

Grade	**Frequency**	**Percent**
3	14	1.8
4	119	14.9
5	263	33.0
6	201	25.2
7	197	24.7
8	3	.4
TOTAL	**797**	**100.0**

The graph below (Figure 4.3) illustrates that most children in the sample come from families in which both parents are married and living together. Over 50% of the sampled children's parents were married at the time of the study. As would be expected, albeit rather low, a reasonably high percentage of the parents were never married, given the trend in which a lot of couples tend to co-habit for a number of years before getting married. This trend is most noticeable among the youth. However, this might be somewhat misleading as the children who did not know whether their parents were married or not were also included as 'never married'. The true percentage of 'never married' parents could be a little lower than it appears to be in this study.

Figure 4.3: Marital status of parents as reported by learners.



4.3.2 Hypothesis 1: A higher presence of PTSD in a sample of learners in primary schools in a Black township will be observed

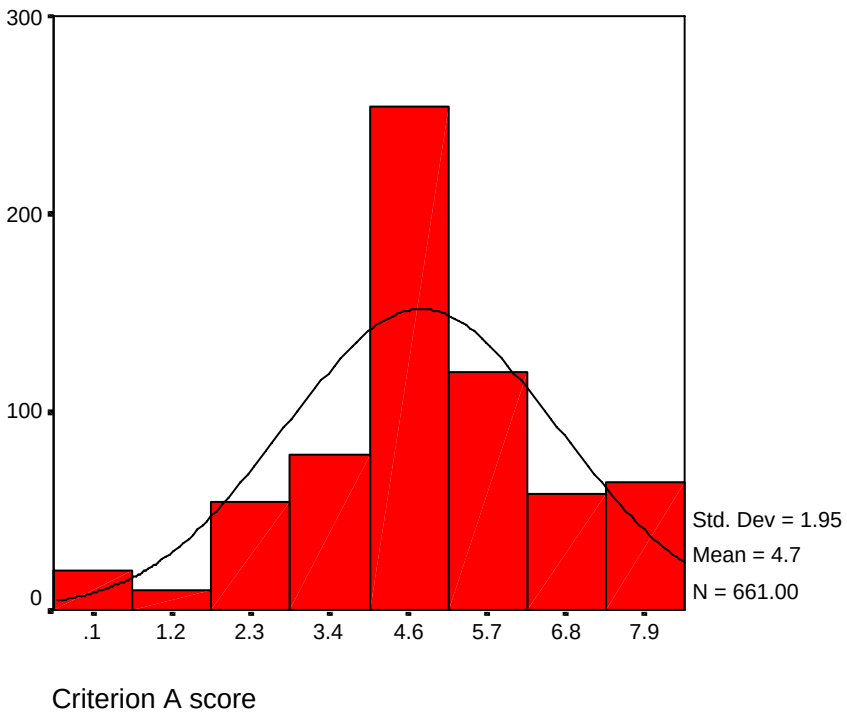
While the results of the questionnaire vary considerably, a particular pattern was maintained. Significantly higher scores were observed across all criterion groups. Since different criterion groups consist of different number of symptoms and items, different scores have been yielded. General observation, however, revealed that many children are suffering from a number of posttraumatic stress symptoms unnoticed. Table 4.3 shows how scores were spread across the different criterions. These different scores are mainly due to the differences in the number of items and symptoms for each criterion group. When one looks at the mean scores it becomes clearly obvious that higher scores were obtained by the children thus indicating that many children are suffering from PTSD symptoms in one way or another. These will be discussed separately below.

Table 4.3: Spread of criterion scores obtained by learners

Criterion	Means	Standard deviations	Minimum scores obtained	Maximum scores obtained
Criterion A	4.7	1.95	0	8
Criterion B	14.7	6.13	0	32
Criterion C	20.5	5.72	4	36
Criterion D	12.8	4.03	1	27
PTSD score	52.7	13.34	30	96

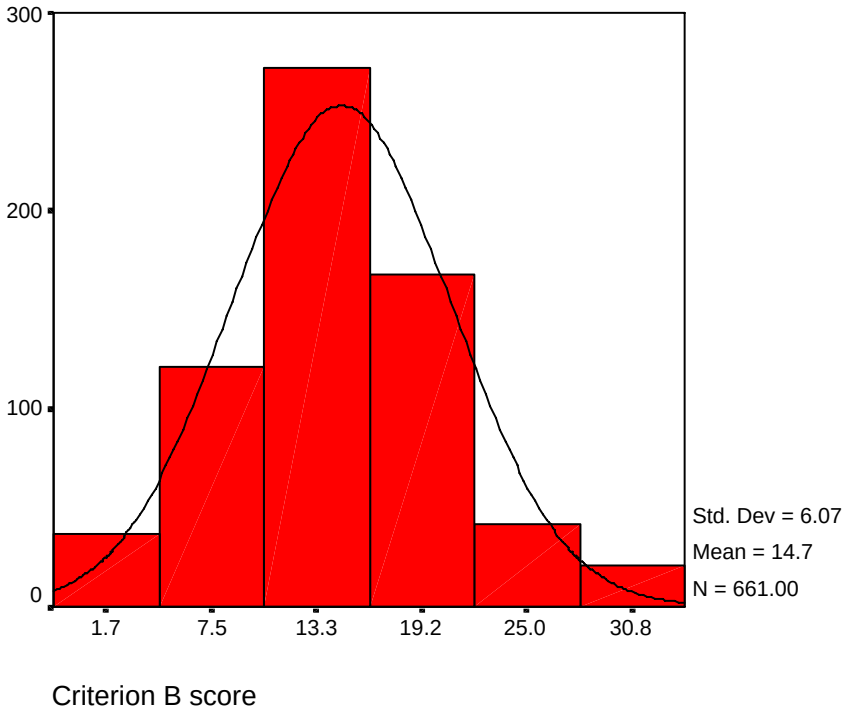
Although generally high, PTSD criterion scores obtained by children in the study differed quite reasonably. Only 661 children's responses could be scored as a number of these children reported to have not been exposed to traumatic events of any kind. A little less than half (46.1%) of the children received the Criterion A (measure of the exposure to extreme stressful events) score of 4 or less. Scores 4, 5, and 6 were the most frequently obtained by the children. The mean score for Criterion A was 4.7 with the standard deviation of 1.95. Only 9.8 percent of the children got the maximum score of 8. It means that these children appraised the events as severely threatening.

Figure 4.4: The frequency of Criterion A scores.



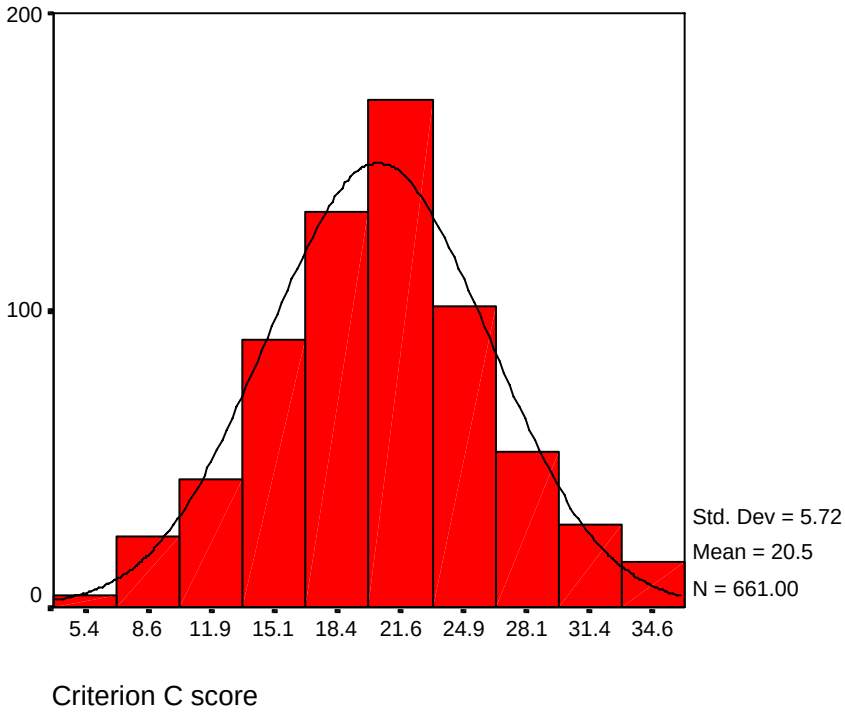
Scores for Criterion B (re-experiencing the trauma) ranged from 0 to 32 with 15 as the frequent score (close to 10%). The maximum score for Criterion B is 32. 56% of respondents scored 15 or less. The mean score for criterion B was 14.74 and the standard deviation of 6.13.

Figure 4.5: The frequency of Criterion B scores



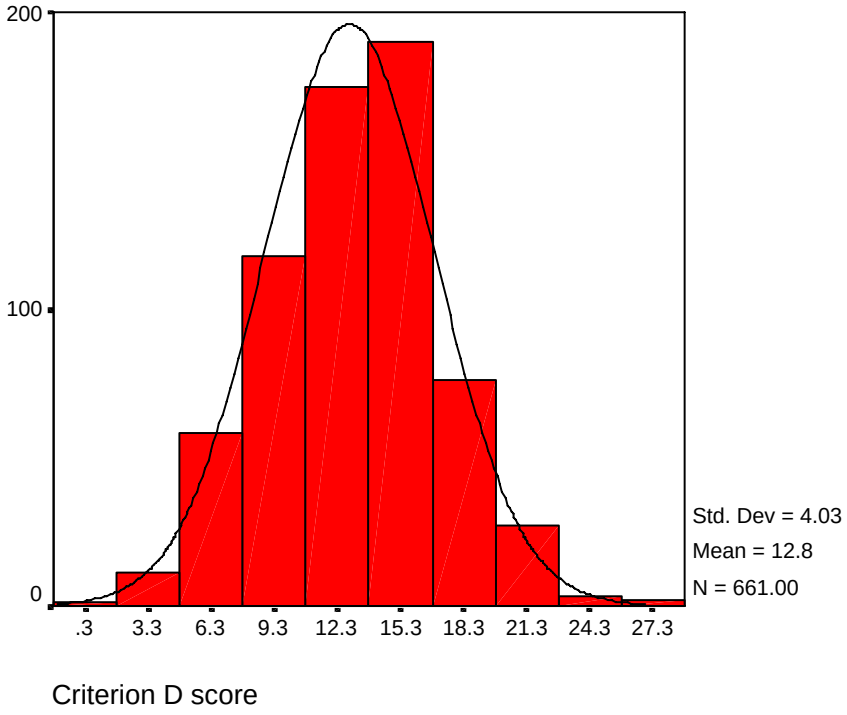
Criterion C (avoidance or denial of the experience) had scores between 4 and 36 with a maximum score of 46. The mean score for this criterion is 20.47 with the standard deviation of 5.72. It should be borne in mind that this criterion has the most number of symptoms thus explaining such a large mean score. 51.4% of the respondents received the scores of 20 or less. Score 22 is the most frequent.

Figure 4.6: The frequency of Criterion C scores



Criterion D (symptoms of over arousal) has the frequency of scores between 1 and 27 and it carries a maximum of 30. Score of 12 was the most frequent with the mean of 12.6 and the standard deviation of 4.03. About 46% of the scores were 12 or less.

Figure 4.7: The frequency of Criterion D scores



The total PTSD scores ranged from 19 to 96 (maximum= 116) with the mean of 52.68 and the standard deviation of 13.34. According to the author of the scale scores give a measure of intensity of the PTSD symptoms. Scores 50 and 58 were the most frequent scores with the frequency of 4.8% and 5.0% respectively. About 69% of the scores obtained by the respondents were 58 or less.

Figure 4.8: The frequency of total PTSD scores.

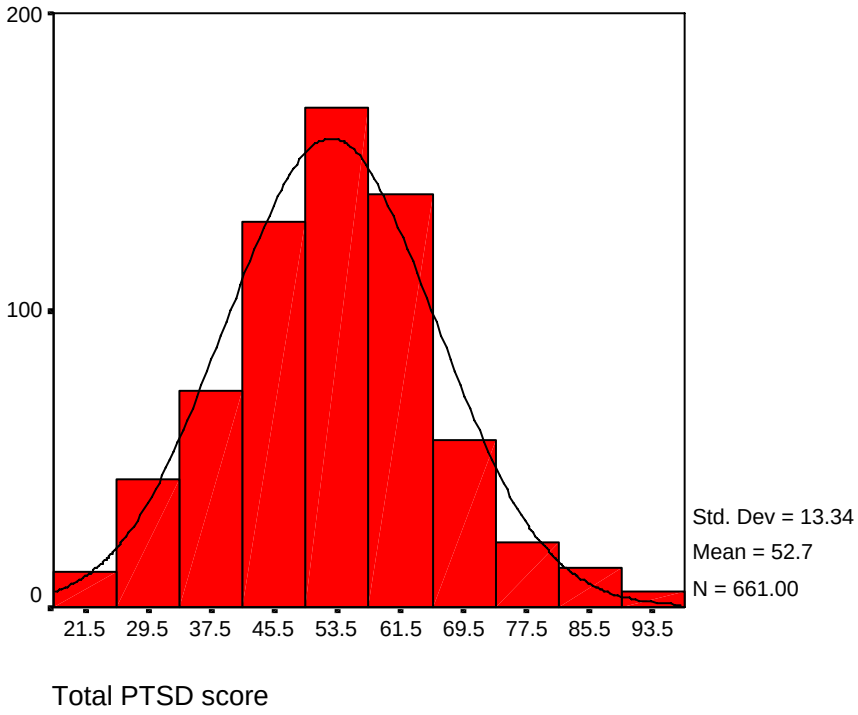


Table 4.4 shows the frequency and extent of PTSD prevalence in the sample of children in township schools. A proportionately high number of children were not diagnosed with PTSD using the WBTH scale. Only about 114 (14.3%) of children in the sample received the diagnosis. While it is clear from these results that the prevalence of PTSD in the township school children is low, there is no doubt that PTSD is prevalent in the area.

Table 4.4: PTSD prevalence in a sample of school children.

PTSD Met?	**Frequency**	**Percent**
NO	683	85.7
YES	114	14.3
TOTAL	797	100.0

Table 4.5 illustrates the association between PTSD criterion groups and the diagnosis of PTSD. That means, what will happen to the level of PTSD when any or all of the criterion scores are inflated or decreased. Using the Pearson correlation, it appears that there is a positive relationship (r= 0.524, significant at 0.01 level) between Criterion A and PTSD score. One can thus deduce from this that the intensity of the traumatic event does contribute to the development of PTSD. In other words high Criterion A score will be accompanied by an increase in total PTSD score. Therefore, the severity of the degree of exposure to traumatic events can be expected to yield an increase in PTSD score.

Table 4.5 also shows that there is a positive relationship between Criterion D score and the development of PTSD. As with the Criterion A score, it can be expected that an increase in Criterion D symptoms would correspond with an increase in the severity of PTSD.

Interesting results were obtained in relation to Criterions B and C and the severity of PTSD. There seems to be a strong correlation between Criterion B and the severity of PTSD (r= 0.837). This means an increased Criterion B score does correspond strongly with an increase in PTSD score. The same situation is also observed in relation with the Criterion C score. It could therefore be assumed that Criterions B and C had quite a substantial contribution to the total PTSD score. While all the PTSD criterions play a major role in the diagnosis of PTSD, it is quite clear that Criterions B and C can be ultimately accountable to a larger degree to the diagnosis of PTSD in many children.

Table 4.5: The association between Criterions A, B, C, and D, and the total PTSD score.

		Criterion A score	**Criterion B score**	**Criterion C score**	**Criterion D score**	**Total PTSD score**
Criterion A score	Pearson Correlation	1.000				
Criterion B score	Pearson Correlation	.414	1.000			
Criterion C score	Pearson Correlation	.348	.527	1.000		
Criterion D score	Pearson Correlation	.131	.333	.299	1.000	
Total PTSD score	Pearson Correlation	.524	.837	.811	.602	1.000
	N	**661**	**661**	**661**	**661**	**661**

Correlation is significant at the 0.001 level (2-tailed)

4.3.3 Hypothesis 2: The frequency of exposure to stressful events will be much greater for boy than girls

Figure 4.9 illustrates the proportion of learners exposed to stressful events at some point. A huge proportion of learners met Criterion A (75.8%), implying that the majority of children in the township have been exposed to some forms of stressful events thus reacting negatively to them. Though it appears that more girls meet Criterion A than boys do, the difference was not significant. This means that both boys and girls are equally exposed to traumatic events.

However, it is apparent that this number (both girls and boys) differs significantly from those who did not meet Criterion A (i.e. those who have been exposed to events that were not extreme enough to be defined as traumatic) and those who have not been exposed to any form of traumatic stressor. Less than 20% of the children reported to have not been exposed to stressful life events in the past. Results of the study, however, failed to show a significant difference in the scores obtained by boys and girls.

Figure 4.9: The proportion of learners exposed to stressful events by gender.

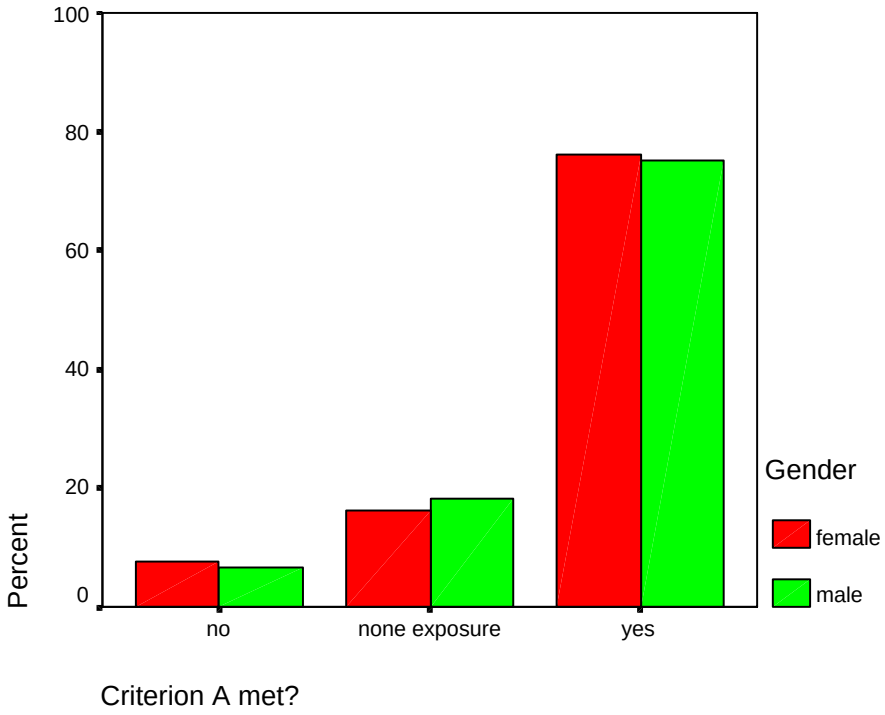


Figure 4.10 indicates that more boys and girls in the present study suffer from symptoms of reexperiencing the trauma (80.2%). These symptoms include recurrent and intrusive recollection of the traumatic event, including images, thoughts, or perceptions. Children often may have frightening dreams without recognisable content. Further t-test analysis showed a significant difference between boys and girls at $p< 0.01$ (t= 0.292,), with girls showing more symptoms than boys.

Figure 4.10: The proportion of learners experiencing PTSD symptoms of intrusive and recurrent recollection of the traumatic event.

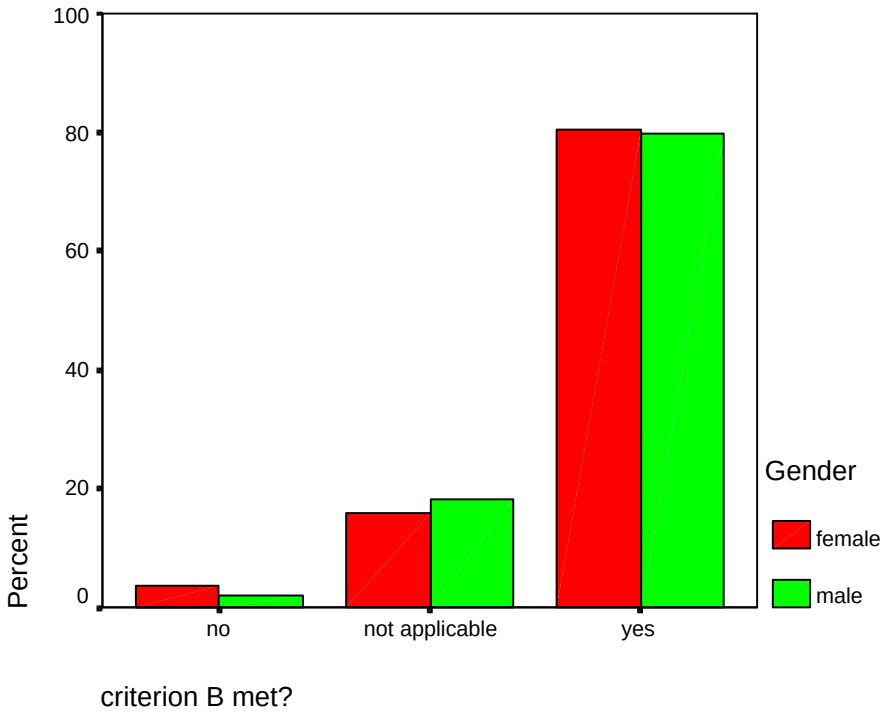
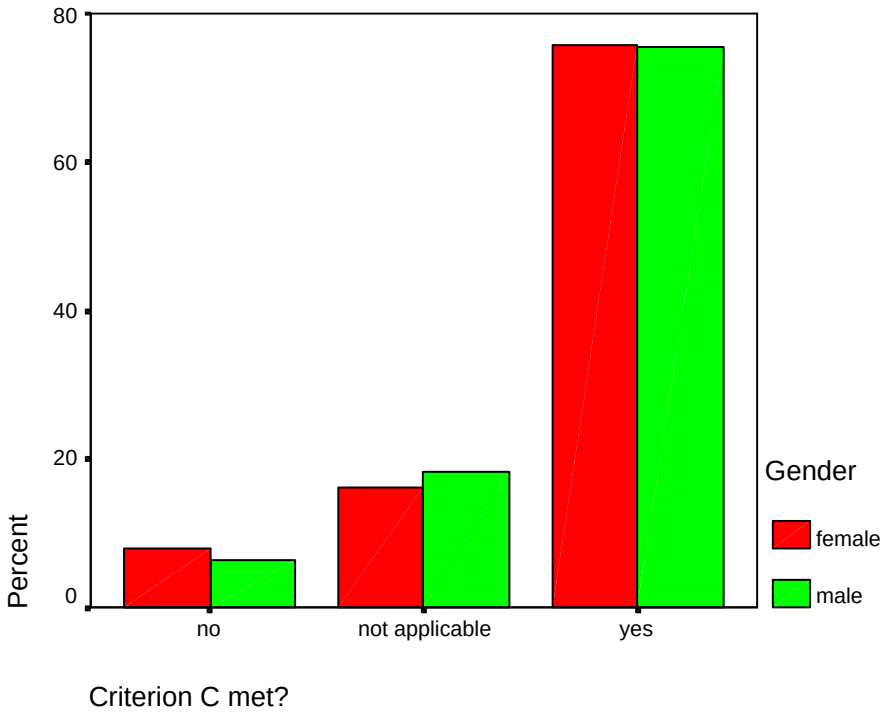


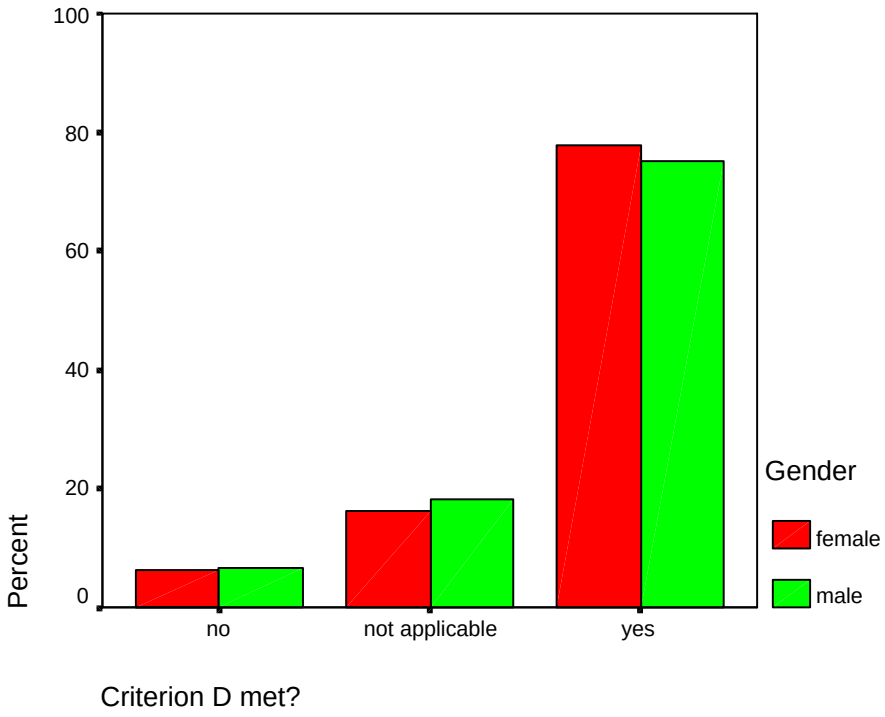
Figure 4.11 shows that 75.7% of the learners were experiencing the symptoms associated with the avoidance of stimuli of the traumatic event. Efforts to avoid thoughts or conversations, avoidance of the activities, places, and people associated with the trauma are some of the symptoms. It is also evident from the figure below that although more girls reported higher incidents of Criterion C symptoms than boys, these differences were not significantly pronounced.

Figure 4.11: The proportion of learners experiencing PTSD symptoms of avoidance of the traumatic event.



About 76.5% of the children in the present study also suffered symptoms associated with the physiological reaction to the trauma. These include persistent symptoms of increased arousal such as difficulty falling or staying asleep. People experiencing these symptoms have irritable moods or outbursts of anger, are hypervigilant and exhibit exaggerated startle responses. As with other symptoms criterions, children did not show a significant difference in terms of gender.

Figure 4.12: The proportion of learners experiencing persistent symptoms of increased arousal as a result of the traumatic event.

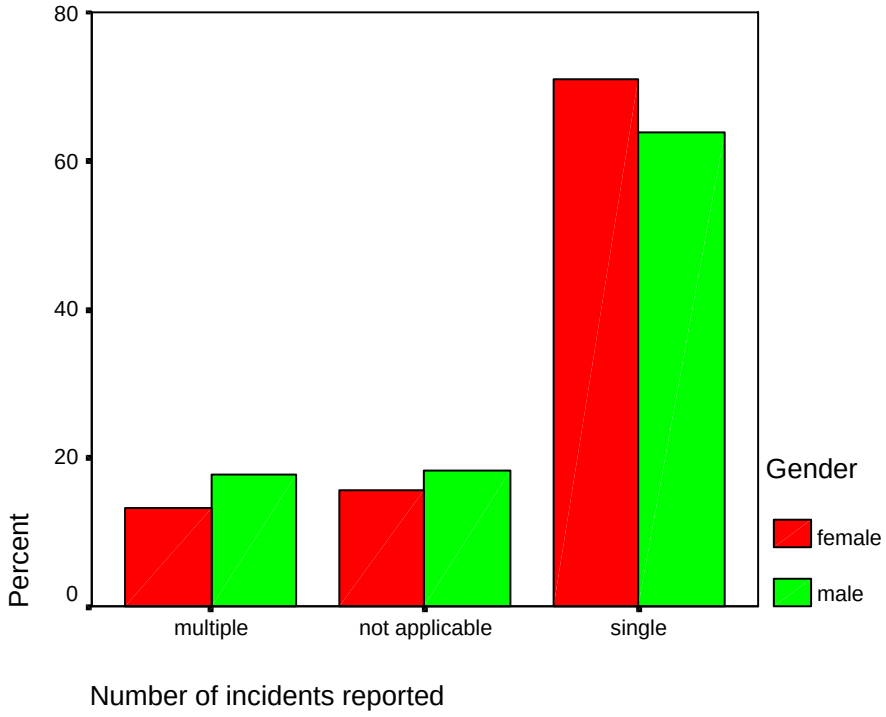


As the majority of children reported to have been exposed to traumatic events, similarly a large number reported having been exposed to a number of traumatic events. Figure 4.13 illustrates the proportion of responses reported by children in terms of the 'number of incidents' reported. A significantly higher number of children reported being exposed to a single event than multiple events. More that ten percent of children reported to have been exposed to more than one upsetting events.

It should be borne in mind, however, that multiple exposure does not automatically mean continuous traumatisation. Multiple exposures refer to the exposure to a number of independent traumatic events that do not necessarily occur simultaneously. This means that a rape victim may report having witnessed a killing of someone at anytime prior or subsequent to his or her traumatic experience. Continuous traumatisation on the other hand refers to repeated experience of event(s) that are related to each other and may exist over time (for example, incest).

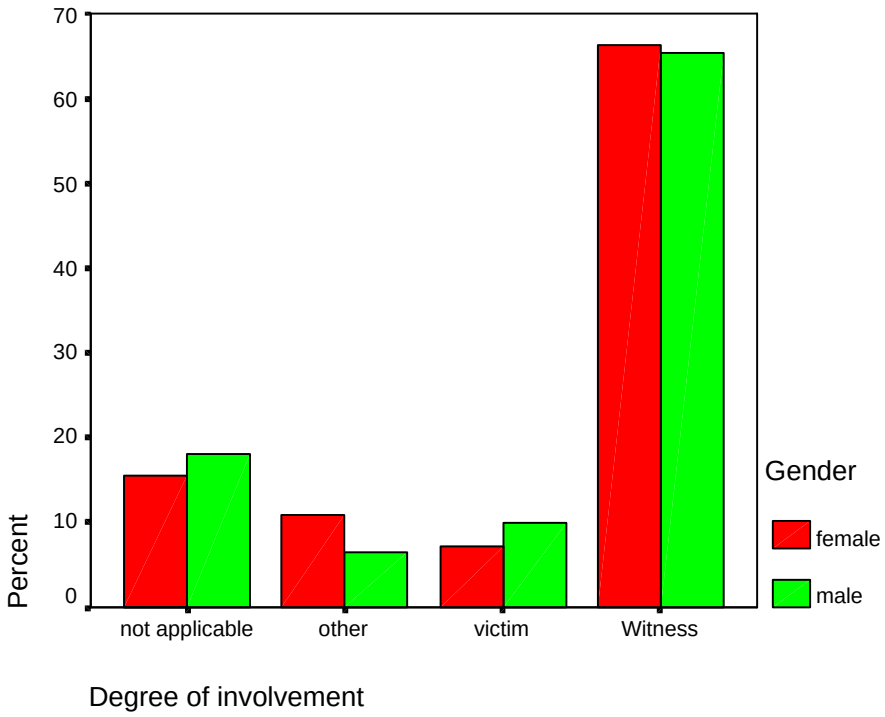
Some children in the present study reported to have been directly involved in a single incident followed by a number of other unrelated events in which they were witnesses. In another words, they may have been victims of certain events but witnesses or observers in subsequent events reported to have been traumatic.

Figure 4.13: A number of events witnessed and/or experienced as reported by learners by gender.



As with the above graph, figure 4.14 below shows the children's level of involvement in reported incidents. It is clear from the graph that over 60% of the children witnessed the events. There is no significant difference in gender, and this further confirming the results of figure 4.9 that both boys and girls are equally exposed to traumatic events. However, more boys than girls reported to have been the direct victims of events they were exposed to.

Figure 4.14: A graph depicting the level of involvement in reported incidents by gender.



While the above graph shows the degree to which these children were directly or indirectly involved in their trauma experiences, the table (Table 4.6) below shows very interesting results concerning the type of trauma that children reported having experienced. It is evident from the table that girl experienced (directly or indirectly) more rape or sexual abuse than their male counterparts. Girls also experienced more vehicle accidents than boys.

Although girls experienced more trauma than boys in many other type of violence, these were not, apart from rape/sexual abuse and vehicle accidents, significantly different frequencies. An ANOVA was carried out to determine these differences thus indicating the significant difference in gender exposure to type of violence in general (F [3.024] significant at 0.004). A Bonferroni post hoc analysis revealed significant gender differences between four variables, viz. rape/sexual abuse, stabbing/gun or other objects, other and not exposed. This means that the frequency at which these various forms of trauma were experienced differed according to gender differences.

Table 4.6: The frequency of types of trauma reported by gender

Type of violence	**Gender**		**Total**
	Female	Male	
Rape/sexual abuse	54	16	**70**
Vehicle accident	113	91	**204**
Stabbing/gun or other objects	89	84	**173**
Threat of violence	13	4	**17**
Burning	3	5	**8**
Torture/beating	26	22	**48**
Other	73	71	**144**
Not exposed	68	65	**133**
Total	**439**	**358**	**797**

There have been a number of instances where a learner was neither directly involved in nor being a victim of violence. In this case a learner may have only witnessed an event occurring to someone else. The pie graph below displays the proportion of the victims' identities as reported by the children. Only 8.5% of all the children reported to have been the victims of events they had been exposed to. Clearly a comparatively small proportion of these children have actually been the victims of events they reported. It is obvious that the traumatic events they were exposed to were indirectly affecting them. Close to half of the victims of the traumatic events that children witnessed were strangers. A considerable proportion of victims were someone in the child's family, at about 10.5%.

Figure 4.15: The identity of victims as reported by learners.

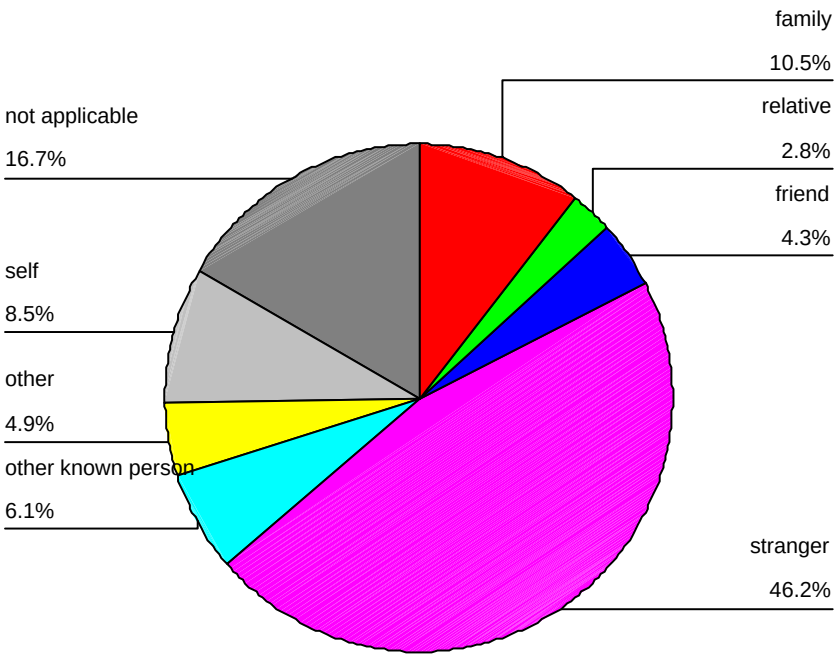


Table 4.7 shows that 8.8% of the children reported to have either witnessed or experienced rape/sexual abuse as the traumatic incident. 1.3% of these respondents reported that they were the victims of rape or sexual abuse. The most common traumatic incident or type of violence reported by children was vehicle accidents (25.6%). The most frequently reported traumatic event by children was witnessing the incidents involving a stranger (25.6%). Violence involving guns, knives or other dangerous weapons (at 21.7%) followed closely behind those involving vehicle accidents.

Table 4.7: A cross-tabulation of experienced type of violence by victim's identity.

Violence	**Family**	**Relative**	**Friend**	**Stranger**	**Other known person**	**Other**	**Self**	**N/A**	**TOTAL**
Rape/sexual abuse	7 (0.9%)	2 (0.3%)	10 (1.3%)	31 (3.9%)	5 (0.6%)	5 (0.6%)	10 (1.3%)		**70 (8.8%)**
Vehicle accident	14 (1.8%)	6 (0.8%)	15 (1.9%)	129 (16.2%)	10 (1.3%)	13 (1.6%)	17 (2.1%)		**204 (25.6%)**
Stabbing/gun or other objects	16 (2.0%)	6 (0.8%)	1 (0.1%)	128 (16.1%)	16 (2.0%)	4 (0.5%)	2 (0.3%)		**173 (21.7%)**
Threat of violence	5 (0.6%)		1 (0.1%)	4 (0.5%)	6 (0.8%)	1 (0.1%)			**17 (2.1%)**
Burning				6 (0.8%)		2 (0.3%)			**8 (1.0%)**
Torture/beating	9 (1.1%)	2 (0.3%)	2 (0.3%)	32 (4.0%)	2 (0.3%)		1 (0.1%)		**48 (6.0%)**
Other	33 (4.1%)	6 (0.8%)	5 (0.6%)	38 (4.8%)	10 (1.3%)	14 (1.8%)	38 (4.8%)		**144 (18.1%)**
Not exposed								133 (16.7%)	**133 (16.7%)**
TOTAL	**84 (10.5%)**	**22 (2.8%)**	**34 (4.3%)**	**368 (46.2%)**	**49 (6.1%)**	**39 (4.9%)**	**68 (8.5%)**	**133 (16.7%)**	**797 (100.0%)**

4.3.4 Hypothesis 3: The severity of the PTSD symptoms is related to gender differences

In their study, Vrana and Lauterbach (1994: 289) reported “males and females differed in their probability of experiencing some types of events and in their psychological response to certain events”. This means that there were certain types of traumatic events that were most prevalently experienced by boys than girls and vice versa. In the present study it was apparent that more girls were exposed to most types of traumatic events than boys were.

Below are the two tables detailing the differences in how vulnerable boys and girls are to traumatic exposure. They also show how boys and girls react to traumatic events. Table 4.8 shows the means and standard deviations of different Criterion groups. It is evident from the table that there are no significant differences in their mean scores. It is, therefore, possible to assert that children regardless of their gender react similarly to traumatic events. It is also possible that children, irrespective of gender differences, are equally likely to be exposed to traumatic events although girls would be slightly more prone than boys (cf. Table 4.6). However, as indicated above, boys were slightly more affected than girls. Figure 4.8 below shows different mean scores for all PTSD symptoms as obtained by boys and girls.

Table 4.8: The mean differences for PTSD and PTSD symptoms scores by gender

	Gender	N	Mean	Std. Deviation
Criterion A score	Female	368	4.66	1.99
	Male	293	4.85	1.89
Criterion B score	Female	368	14.61	6.26
	Male	293	14.90	5.97
Criterion C score	Female	368	20.20	5.86
	Male	293	20.82	5.53
Criterion D score	Female	368	12.71	4.22
	Male	293	12.96	3.78
Total PTSD score	Female	368	52.04	13.67
	Male	293	53.48	12.90

A 2-tailed t-test was conducted to confirm the above assertions that gender differences did not exist in the way children were exposed to and how they reacted to traumatic events. Table 4.9 below shows the results of the *t*-test and this reveals that the differences yielded were not significant. Therefore, boys and girls reported to have been equally traumatised and equally developed post-traumatic stress reactions as indicated by the *t* value of 1.379.

Differences in the Criterion A, (Exposure to traumatic stressors) scores for boys and girls were not significant ($t= 1.247$). This means that children administered the questionnaire appraised the severity of the events they experienced in a similar way. Although boys reported relatively higher scores for Criterion A, these scores were not significantly higher to suggest that boys appraised their situations differently.

Criterion B scores revealed the significant differences in the way boys and girls experienced PTSD symptoms associated with the re-experiencing of the trauma. These included recurrent and repetitive recollection of the trauma. Girls seem to experience more symptoms associated with dreams, nightmares and flashbacks about the traumatic event than boys do. Although no significant difference was observed at $p= 0.05$, there was a significant difference at $p< 0.01$.

Children also did not show gender differences in Criterion C scores. This is the defence (conscious and unconscious) mechanism associated with the avoidance of the reminders of the traumatic event.

Boys and girls also did not differ significantly in their development of bio-physiological symptoms such as hyper-vigilance difficulties sleeping and exaggerated startle responses.

Table 4.9: A *t*-test analysis of the gender differences in the attainment of scores for PTSD and PTSD symptoms

	***t*-test for Equality of Means**	
	t	**Mean Difference**
Criterion A score	1.247	-.19
Criterion B score	0.604	-.29
Criterion C score	1.385	-.62
Criterion D score	0.792	-.24
Total PTSD score	1.379	-1.44

Equal variances assumed

4.3.5. Hypothesis 4: Significant differences will not be found in the frequency of PTSD across different schools

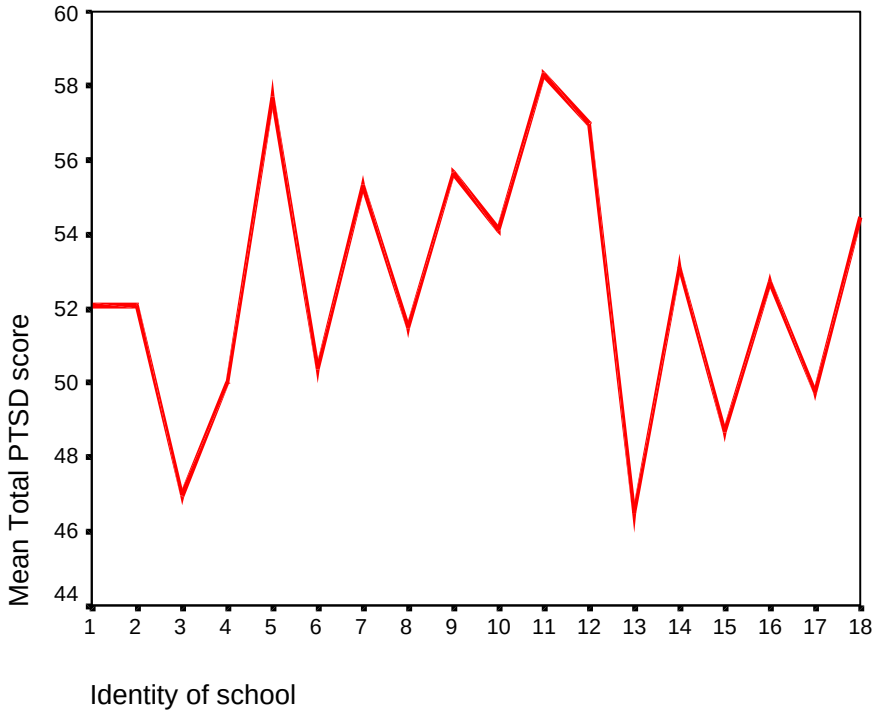
Analysis of the difference in the frequency of PTSD between different schools was performed with the one-way analysis of variance. It is illustrated in table 4.10 that there was a significant difference in the way children from different schools (thus different areas of the township) reacted to traumatic stressors. The table of ANOVA provided the F ratio of 2.654 (significant at 0.000) that should be considered large considering the mean square (between, within) difference. This therefore rejects the null hypothesis that there is no difference between different schools.

Table 4.10: Variations of total PTSD scores across schools.

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	7700.211	17	452.954	2.654	.000
Within Groups	109743.435	643	170.674		
Total	117443.646	660			

The graph shown below (Figure 4.13) further confirms the results on ANOVA as it shows variances between different schools' mean scores.

Figure 4.16: A table depicting the comparison of means across schools.



With one-way ANOVA performed, it became clear that different schools showed different mean total PTSD scores. It was, however, not clear which schools were so significantly different. Figure 4.13 makes it much easier to observe these differences but unfortunately does not provide much information on how significant these differences are. A Bonferroni Post Hoc test was as a result carried out to determine where the differences lie.

Table 4.11: Type of violence as reported by learners by identity of school

Identity of school	**Type of violence**								**Total**
	Rape/sexual abuse	Vehicle accident	Stabbing/gun or other objects	Threat of violence	Burning	Torture/beating	Other	Not exposed	
1	2	10		1		2	2	3	**20**
2	1	10	9	1	1	2	7	3	**34**
3	1	9	6	2	1	5	8	2	**34**
4	5	32	11	2	3	7	15	2	**77**
5	2	18	15	1		1	6	10	**53**
6	1	14	16			1	11	7	**50**
7	11	25	11			6	2	10	**65**
8	4	6	2			7	8	5	**32**
9	5	4	17		1	3	11	12	**53**
10	6	2	9			5	9		**31**
11	2	1	9				4	15	**31**
12	7	20	21			1	16	4	**69**
13	5	18	11				6	7	**47**
14	4	7	14	3		2	4	7	**41**
15	3	9	5	1			11	6	**35**
16	5	8	6	6	2	1	10	9	**47**
17	4	7	5			2	3	19	**40**
18	2	4	6			3	11	12	**38**
Total	**70**	**204**	**173**	**17**	**8**	**48**	**144**	**133**	**797**

According to the post hoc analysis performed to determine the differences in the attainment of scores of PTSD across schools, it appeared that significant differences existed between three schools (i.e. schools 5, 12 and 13), with school 13 significantly different from both. In retrospect, when the researcher thought about these schools interesting characteristics were observed.

Firstly, all schools are situated in the same area (i.e. Zone 14) and within a 200-meter radius of each other. School 5, however, is situated in a more affluent section of the area. Children attending these schools could not have come from different areas, except for the minority who may be commuting from other Zones. This will not be exclusive to one school as it happens in almost every school in the township. One would, therefore, not be mistaken to expect the results to be similar between the three schools considering their proximity to each other.

The reason for these differences can, therefore, not be attributed to the surrounding area. Suffice it to say that schools 12 and 13 are situated opposite each other, therefore, one can assume that if there had been an incident affecting children from school 12 it would also have been witnessed by children from school 13 (Assuming that the incident occurred in the vicinity of the schools). As children from schools 12 and 13 would have been equally exposed to the same traumatic event(s) they would probably show similar results. It could also be expected that children from school 5 would not have been exposed to that particular incident thus showing results different from both schools 12 and 13. As it stands schools 5 and 12 reported higher mean scores for PTSD.

While these results seem to negate the environmental effects, perhaps more attention should be focused on the schools themselves. No data was collected to determine how different schools in the township differ both administratively and in their training methods or perhaps the support children generally receive from their teachers. Perhaps this would have provided the researcher with the information to speculate on the effect that the schools may have on the children's resilience.

Perhaps a qualitative data collection and analysis would need to be undertaken to determine the reason for these differences. So far this has been inconclusive to the researcher.

Secondly, all these schools were situated close to the main route used mainly by taxis. One should note that the most frequent type of trauma that children reported was vehicle accidents (25.6%). This would be expected for children who cross the main route twice or more daily. It should be noted that this is a busy street and children have to cross it when coming to and from school and going to the shops during lunch. The probability of these children becoming the victims of or witnesses to vehicle accidents is, therefore, quite high. The table above (Table 4.11) shows that children from these schools reported about equal number of vehicle accidents. As with the above it is quite difficult to attribute the scores to the children's surrounding area since it is the same across these schools.

Thirdly, the schools are also within a 100-meter radius from the shops. During break time most children from these schools go to the same shopping complex. It can be assumed that this can expose children to a number of factors. It should also be

indicated that there are nearby secondary schools attended mainly by older adolescents. This can put younger children at a disadvantage as the older ones may bully the younger ones. There is also a possibility that children may witness fights among the older people, as there is also a bottle store nearby.

Table 4.11 also shows that children from school 13 reported fewer types of trauma than the other two. For example, they did not report any threat of violence made to them, burning and torture/beating. School 12 reported high on “other” types of trauma (i.e. those that could not be classified under any of the 6 specified).