



# European Journal of Psychology and Educational Research

Volume 2, Issue 2, 43 - 51.

ISSN: 2589-949X

<http://www.ejper.com/>

## Effects of Psycho-educational Intervention on Post-traumatic Stress Disorder Symptoms among Secondary School Students Exposed to Conflict in Kano Metropolis, Nigeria

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**Abstract:** Insurgency and armed conflict in Northern Nigeria especially Kano metropolis have exposed many secondary school students to trauma related experiences and post-traumatic stress disorder (PTSD). It is estimated that about 13,000 persons have been killed and about 981,416 internally displaced persons (IDPs) are living in the various camps in Northern Nigeria (NEMA, 2015). The profound impact of the trauma experienced by these students on their mental health informed the need for the psycho-education intervention. The objective of this study was to determine the effects of psycho-educational intervention on PTSD symptoms among secondary school students exposed to conflict in Kano metropolis and to examine the effects of psycho-education intervention in reduction of re-experiencing, hyper-arousal and avoidance symptoms. A pre-test and post-test control group design was adopted for this study. A sample of 40 research participants (male=19, female=21) were selected for the study. These research participants were drawn from secondary schools clustered within the community where conflicts have taken place. The instrument for data collection was the adapted version of the University of California at Los Angeles post-traumatic stress Disorder Reaction Index (UCLA PTSD Reaction Index). The UCLA PTSD Reaction Index measured PTSD symptoms. Result obtained after testing the hypotheses showed that there was a significant difference in the PTSD mean scores of students exposed to psychoeducational intervention (Mean= 22.40, Standard deviation = 4.47, Standard error = .998) and those not exposed to the intervention (Mean = 38.90, Standard deviation = 14.835, Standard error = 3.317),  $t(38) = -4.763$ ,  $p < .0001$  (two-tailed), Effect size is  $r = .61$ . It is important to provide professional and psychosocial support to students who developed mental health problems due to exposure to conflict.

**Keywords:** *Posttraumatic stress disorder, re-experiencing symptoms, hyper-arousal symptoms, avoidance symptoms.*

**To cite this article:** Mebu, V. A. (2019). Effects of psycho-educational intervention on post-traumatic stress disorder symptoms among secondary school students exposed to conflict in Kano Metropolis, Nigeria. *European Journal of Psychology and Educational Research*, 2(2), 43-51. <https://doi.org/10.12973/ejper.2.2.43>

### Introduction

The lifelong consequences associated with conflicts are exceedingly costly in terms of human displacement, death, bereavement, trauma and posttraumatic stress disorder. The rise in the activities of insurgents, armed conflict and terrorist attack is one of the challenges governments in many parts of the world are facing today. UN General Assembly (2015) reported that 2014 witnessed unprecedented challenges for the protection of tens of millions of children growing up in countries affected by conflict and mass abduction of civilians, including children has become an increasingly prevalent feature of conflict in many situations around the world.

According to United Nations Children's Emergency Fund (UNICEF, 2016), an estimated 535 million children-nearly one in four-live in countries affected by conflict or disaster, often without access to medical care, quality education, proper nutrition and protection. United Nations High Commissioner for Refugees (UNCHR) 2015 annual Global trends report revealed that the number of people forcibly displaced at the end of 2014 had risen to a staggering 59.5 million compared to 51.2 million a year earlier and 37.5 million a decade ago. The UN Security Council (2015) also reported that at the end of 2015, more than 60 million people had been forced to flee their homes as a result of conflict, violence and persecution.

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Countries affected by various forms of conflict are vulnerable to continued civil disorder, poverty, diseases, depression, anxiety and posttraumatic stress disorder among its citizen. Central African Republic, Iraq, Isreal/state of Palestine, Uganda, South Sudan, Syria, Nigeria, Democratic Republic of Congo, and Somalia are all recent examples of countries whose civilian population have been affected by armed conflict. Nigeria in particular has witnessed various forms of violence: kidnapping in the south, armed conflict, ethno-religious violence, armed banditry and terrorist attacks in the north. About 25% of children in Nigeria have been directly affected by some forms of violence before the age of 18 (Akinlabi, 2015). The lingering insurgency in northern part of Nigeria has inflicted various degrees of traumatic experience to the people causing the disruption of economic and social activities, closure or relocation of schools and students in that part of the country.

Over 13,000 people have been killed and 981,416 people (most of them children and adolescents) have been internally displaced during the more than five years armed conflict in Nigeria (NEMA, 2015). A recent report by Human Right Watch (2018) submitted that in Nigeria, conflict has resulted in deaths of over 20,000 civilians and approximately 2.1 million internal displaced persons (IDPs). It was also reported that an estimated 225,000 are refugees in neighbouring in countries like Cameroon, Chad and Niger republic. Secondary school students exposed to conflict suffers varying degree of psychological, cognitive, emotional, physical and mental health problems in form posttraumatic stress disorder (PTSD), anxiety, displacement, bereavement, diseases and malnutrition.

Kano metropolis have been a flashpoint for episodic violence that have often followed religious lines from the Maitatsine sect in 1984, religious riot in 1991 triggered by a preaching event by a German evangelist, reprisal attack for the killings of some northern Muslims in the south in 1999 and 2004, post-election violence in 2011, 'Boko haram' attack in 2012 and the beheading of a woman 'blasphemy' in 2016. Armed conflict has disrupted the social and economic activities in Kano metropolis and during these violent conflicts, many youth who are of secondary school age are affected and this has made them vulnerable to psychological trauma. Due to the armed conflict situation in Kano metropolis, many students in secondary schools who have been exposed to this conflict have exhibited some form of psychological problems such as depression, anxiety and PTSD symptoms (Iweze, 2014).

Post-traumatic stress disorder (PTSD) is an anxiety disorder marked by reliving a traumatic experience in nightmares, flashback, or intrusive thoughts, avoidance of stimuli associated with the trauma and emotional numbing, symptoms of increased arousal such as; irritability and difficulty in concentrating, apathy and occupational and social impairment (Beisler, Wiwa & Adebajo, 2010). It is expected that students who are exposed to traumatic or terrifying events such as violent crises, armed robbery, shooting, bombing, rape or a severe road traffic accident will experience post-traumatic stress disorder and exhibit post-traumatic stress disorder symptoms (Korb, 2013).

Secondary school students in Kano metropolis who have witnessed incessant conflicts are likely to develop PTSD especially after experiencing a very frightening situation like seeing another person being tortured or killed, bombing and shooting of innocent people. Although there are other risk factors for developing PTSD and these are gender, family history of psychiatric disorders, life stress, low socio-economic status, living condition and low educational level (AACAP, 2011; Copeland, Keeler, Angold & Costello, 2007). However, there are three major characteristics of PTSD and these are re-experiencing, hyper-arousal and avoidance symptoms.

Re-experiencing symptoms involves reliving the traumatic event such as intensive memories, nightmares, dissociation, anxiety and physiological reactivity caused by triggers reminding one of the traumatic events. Re-experiencing symptoms may result when components of the fear network are activated by some stimulus which are external and which may include stimuli not directly associated with the trauma (Foa & Kozak, 1986). Secondary school students exposed to conflict in Kano metropolis may exhibit re-experiencing through nightmares about threats to self, through disorganized and agitated behaviours that are symbolic of the trauma, or through anguish when presented with reminders of the traumatic event.

Hyper-arousal symptoms in adolescents may take the form of night terrors, sleeping and concentration difficulties, irritability, hyper vigilance, night waking, and an increase in exaggerated startle responses (Yule, 2001). Traumatic events like conflict may have many stimulus-danger associations or generalized danger perception. Secondary school students who are exposed to conflict in Kano metropolis are likely to develop unrelated fears such as separation anxiety, adjustment problems in schools, hypervigilance and fear of the dark after a traumatic event.

Avoidance symptoms are characterized by avoidance of trauma reminders, loss of interest in previously enjoyable activity and withdrawal from social situations. Secondary school students exposed to conflict in Kano metropolis are likely to show more avoidance to minimize the occurrence of re-experiencing the traumatic event. Avoidance has the ability to help traumatized secondary school students to lessened activation of their fear network by withdrawing from places that had once been attacked or places that are prone to conflict. Avoidance among individuals who experience post traumatic stress disorder symptoms can be observed in constrained affect, regression of social and developmental skills, and constraints in play (Scheeringa, Zeanah, Drell, & Larrieu, 1995).

Approaches used by different governmental and non-governmental agencies in addressing PTSD symptoms of secondary school students exposed to conflict in Kano metropolis has been the distribution of relief and food materials

to the victims. They also distribute drugs and offer temporary medical attention to alleviate the pains of the students. These approaches are not only insufficient for students to cope with PTSD; it has also failed to address the psychosocial needs of the students. Therefore, there is considerable need to come up with psycho-educational intervention to help these students. Despite the need for efficient and cost-effective treatments for PTSD, no studies to date have investigated psycho-education as a potential intervention for this disorder among secondary school students exposed to conflict in Kano metropolis. Therefore, the need for an evidence-based empirically proven intervention in addressing PTSD symptoms becomes important and one of such approach is the Psycho-education treatment model.

Psycho-education refers to the combination of psychological and educational treatment plan offered to individuals with mental health conditions to help them deal with their conditions in an effective way. Psycho-education is described as a professionally delivered treatment modality that incorporates and synergizes psychotherapeutic and educational interventions (Lukens & McFarlane, 2004). Psycho-education has three components: condition-specific information, skills training for managing challenging circumstances, and emotional support. Structured psychoeducational programmes which usually emphasize health, collaboration, competency, and empowerment, are designed to be delivered by those who have the expertise and experience to deliver the programmes (Rowe, Sperlich, Cameron & Seng, 2014).

Psycho-education embraces several complementary models and intervention in the treatment of PTSD. Psycho-education as an intervention reflects a paradigm shift in the treatment of PTSD among secondary school students exposed to armed conflict and any other violent conflict. The educational component of the psycho-educational intervention is based on the assumption that people who have developed PTSD need accurate information about their condition. The psychotherapeutic component of the psychoeducational intervention involves developing coping mechanism, relaxation training or exercise and spirituality.

While relatively much has been written about the effects of psycho-educational interventions in the treatment of mental illnesses or disorders, nothing has been written about the effects of psycho-education on PTSD symptoms among secondary school students exposed to conflict in Kano metropolis. There is considerable value in determining a robust methodology to establish the efficacy of the psycho-education intervention in addressing PTSD symptoms among secondary school students exposed to conflict in Kano metropolis, thus, the need to employ the intervention for this current study.

#### *Gaps in Literature*

PTSD development among people affected by armed conflict has been attracting an increasing attention in recent psychological research and it also raised issues on the efficacy of a short-term treatment or intervention to reduce PTSD symptoms. The subjects of interest in the current study are secondary school students exposed to conflict and who have develop PTSD symptoms in the school setting. Review of literature revealed that many students exposed to violence or other conflict situations in Kano metropolis and who also exhibited PTSD symptoms do not receive any form of psycho-educational intervention to help them reduce the symptoms.

However, few studies documented the extent of violence exposure and its associated psychological symptoms but none is geared towards using psycho-educational intervention to reduce PTSD symptoms. It was also observed that many studies were researches conducted in geographical location different from where the present study is conducted and some of the studies used psycho-educational intervention in treating psychological disorders such as depression, anxiety etc which is different from PTSD symptoms which is the focus of this study.

Also, some of the studies employed survey research design which involves gathering data through interviews and questionnaires that sought for the opinions and perceptions of the sampled research participants on their exposure to violence and development of PTSD whereas the present study used an experimental research design capable of determining the effects of the treatment package (psycho-education) in reducing PTSD symptoms among secondary school students exposed to conflict.

Similarly, it is evident that there were no studies that applied psycho-educational intervention in the treatment of PTSD symptoms among secondary school students exposed to conflict in Kano metropolis rather many cases of individuals with PTSD symptoms were treated with other interventions. Also noteworthy is the issue of spirituality embedded as a component of the psycho-education intervention and this is capable of helping many Africans in coping with adversities. Among studies conducted on PTSD in Nigeria, none has used psycho-education in addressing issues related to PTSD symptoms exhibited by the secondary school students in Kano metropolis.

#### *The Present Study*

The goal of the present study was to determine the effect of psycho-education intervention on posttraumatic stress disorder among secondary school students exposed to conflict in Kano metropolis. Specifically, the objectives of this study are:

1. To find out the effect of psycho-education intervention on re-experiencing symptoms among secondary school students exposed to conflict.
2. To find out the effect of psycho-education intervention on hyper-arousal symptoms among secondary school students exposed to conflict.
3. To find out the effect of psycho-education intervention on avoidance symptoms among secondary school students exposed to conflict.

### *Hypotheses*

The following null hypotheses were formulated for the study.

1. There is no significant difference between post-test re-experiencing mean scores of students exposed to psycho-education intervention and those who were not.
2. There is no significant difference between post-test hyper-arousal mean scores of students exposed to psycho-education intervention and those who were not.
3. There is no significant difference between post-test avoidance mean scores of students exposed to psycho-education intervention and those who were not.

## **Method**

### *Participants and Procedures*

This study specifically adopted the pre-test-post-test experimental design. This design is widely used for the purpose of comparing groups and/or measuring change resulting from experimental treatment. It is also used when random assignment from a common pool of subjects can be accomplished. For the purpose of this study, the pre-test scores obtained from the participants were used as criteria to determine their eligibility to participate in the study. The effects of the intervention (treatment) were assessed by comparing the results for the treatment group to that of the control group. With random assignment of participants in this study, differences in the post-test scores can be attributed to effect of the intervention (treatment).

### *Measures*

The University of California at Los Angeles Post-Traumatic Stress Disorder Reaction Index for children (UCLA PTSD Index adapted from the University of California at Los Angeles by Steinberg, Brymer, Decker and Pynoos, (2004) was used for data collection in the study. The adaptation of this instrument was done by modifying some items that are not applicable to the context of this current study and items that are not commonly used among secondary school students in Nigeria. The UCLA PTSD Index has 20 items that measure re-experiencing, avoidance, and arousal symptoms. An example of such item is "I have upsetting thoughts, pictures, or sounds of what happened come into my mind when I do not want them to.", "I have trouble feeling sadness or anger", "I feel jumpy or startle easily, like when I hear a loud noise or something surprises me". The direction of this scale indicated that the scale is coded in a 5-point scale in which research participants have an option of five frequencies, ranging from 0 ("none of the time") to 4 ("most of the time).

### *Sample*

The sample size for the study consisted of 40 Senior Secondary One (SS1) students who were systematically selected and randomly assigned to the experimental and control group respectively. The experimental and control group has 20 students each (9 males and 11 females for experimental group and 10 males and 10 females for control group). Since it was not possible to work with the entire population of the students, this representative fraction was considered adequate for the study. In an experimental study of this nature, a sample size of 30 and above will be considered appropriate (Sekeran & Bougie, 2010).

The systematic sampling technique was used to select the representative sample from the population of study, after which they were randomized to experimental and control group. The randomization procedure involved assigning research participants to treatment and control groups without involving any potential biases or judgements.

## **Treatment/Intervention Procedure**

### *Experimental Group*

The psycho-education intervention treatment package was administered by the researcher with the help of some research assistants. The psycho-education intervention was used basically to address the PTSD symptoms exhibited by the research participants. There was a pre-group meeting before the first session was conducted and the purpose of the pre-group meeting was two-fold, to allow group members to get acquainted and to prepare research participants for

the group experience (Corey & Corey, 2002). During the meeting, the researcher clarified the purpose of the group and what participants should expect at the end of each session. The issue of confidentiality was discussed and participants were allowed to ask questions. Also, information about group session times, dates and the schedules for the group sessions were discussed with the participants.

The researcher conducted the activities required in these sessions and the treatment administration lasted for 12 sessions for 6 weeks, each session was divided into 40 minutes twice a week for six weeks and the research participants always converge at the designated classroom in the school. The 40 minutes twice a week session is to ensure that these sessions accommodates the school break period of 40 minutes or lesson period which is also 40 minutes. This is to enable the programme go in tandem with the school time-table so as to give all the participants the opportunity to participate fully in the study. The researcher ensured that this class is far away from the other class that was designated for the other group. These classes for both groups minimized the interaction between them.

The first session of the psycho-education treatment package has an introductory part that stated the importance of the intervention programme and its benefits to the students. The second session was used for group cohesiveness and building of rapport among the research participants, researcher and the research assistants. Session three of the package contains the concept of PTSD, its meaning and symptoms and this continued up to sections four and five. Session six and seven focused more on research participant's reaction to traumatic stress. Session eight and nine contains coping mechanism and strategies and how it can be developed. Session ten and eleven focused on relaxation training which involve breathing exercise and so on. The last session based on African mentality focused on spirituality. The last two sessions are extension of the coping mechanism and strategies that will help the participants to overcome their problems.

### *Control Group*

The research assistants administered the Placebo (Learning Modalities) to engage the research participants in this group. The placebo also took 12 sessions, 40 minutes twice a week for six weeks. The participants met at the designated classroom for this activity and each session lasted for a maximum of 40 minutes twice a week to run concurrently with the experimental group. The major aim of this placebo is to keep the participants in the control group engaged.

The content of the placebo (Learning Modalities) has an introductory part that states the importance of the programme to the participants. The first and second session in the package served as an introduction to the group and building of rapport and group cohesiveness. Session three and four of the package contains learning modalities. Session five and six focused on characteristics of learning styles. Session seven and eight centered more on time management, while session nine and ten focused on note-taking and memory retention. Session eleven and twelve focused on study plan and termination respectively. The research assistants with their level of qualification and competence conducted the activities of the placebo (Learning Modalities) designed for the control group. The whole process was strictly supervised by the researcher to ensure proper compliance to the rules as stipulated in the manual.

### *Statistical Analysis*

Hypotheses formulated in the study was analyzed using descriptive such as charts and inferential statistics, specifically, the t-test statistics for independent samples was used for data analysis. Data were entered, cleaned and analyzed by SPSS version 2.0 windows. The hypotheses was tested at the .05 alpha level of significance.

## **Results**

### *Hypothesis One (HO<sub>1</sub>):*

*There is no significant difference between post-test re-experiencing mean scores of students exposed to psycho-education intervention and those who were not.*

As shown in table 1, result obtained after testing this hypothesis showed that there was significant difference in the post-test re-experiencing mean scores of students exposed to psycho-education intervention (Mean= 4.950, Standard deviation = 1.67, Standard error = .373) and those who were not exposed to the intervention (Mean = 9.500, Standard deviation = 4.10, Standard error = .916),  $t(38) = -4.599$ ,  $p < .0001$  (two-tailed), Effect size is  $r = .597$  - which shows the strength of this difference. Therefore the null hypothesis of no significant difference was rejected. The difference is also presented in Fig 1.

*Table 1: Independent sample t-test showing the difference between the post-test re-experiencing mean scores of students in the experimental and control group*

<b>Experimental Conditions</b>	<b>Mean</b>	<b>Mean Difference</b>	<b>Effect Size (r)</b>					
Experimental Group	4.950							
Control Group	9.500	-4.550	- 4.599	38	4.097	.916	.597	.0001

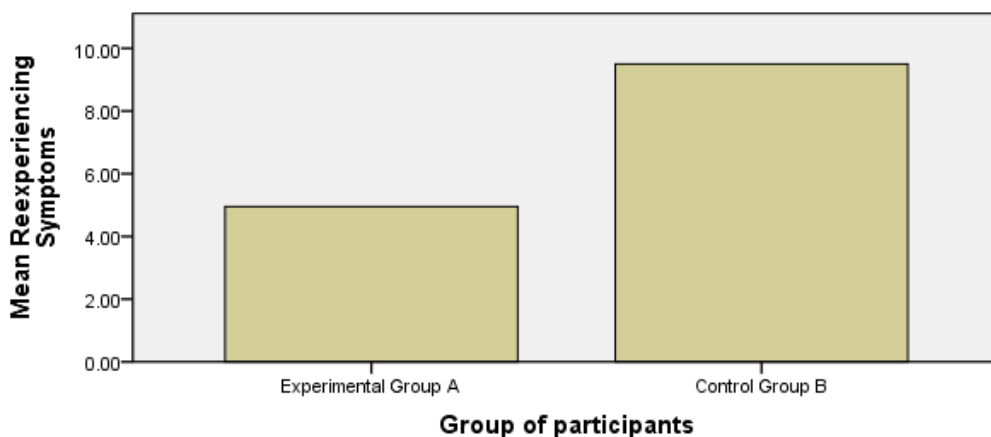


Figure 1. Bar graph showing the difference in re-experiencing symptoms between the experimental and control group after intervention

Hypothesis Two (HO<sub>2</sub>):

There is no significant difference between post-test hyper-arousal mean scores of student exposed to psycho-education intervention and those who were not.

As shown in table 2, result obtained after testing this hypothesis showed that there was significant difference in the post-test hyper-arousal mean scores of students exposed to psycho-education intervention (Mean= 7.600, Standard deviation = 2.326, Standard error = .520) and those who were not exposed to it (Mean = 11.400, Standard deviation = 5.490, Standard error = 2.228),  $t(38) = -2.850$ ,  $p = .007$  (two-tailed), Effect size is  $r = .420$ - which shows the strength of this difference. Therefore the null hypothesis of no significant difference was rejected. The difference is also presented in Fig 2.

Table 2: Independent sample t-test showing the difference in hyper-arousal symptoms between the experimental and control group after intervention

Experimental Conditions	Mean	Mean Difference	t	df	SD	SE	Effect Size (r)	Sig.
Experimental Group	7.600				2.326	.520		
Control Group	11.400	-3.800	-2.850	38	5.490	1.228	.420	.007

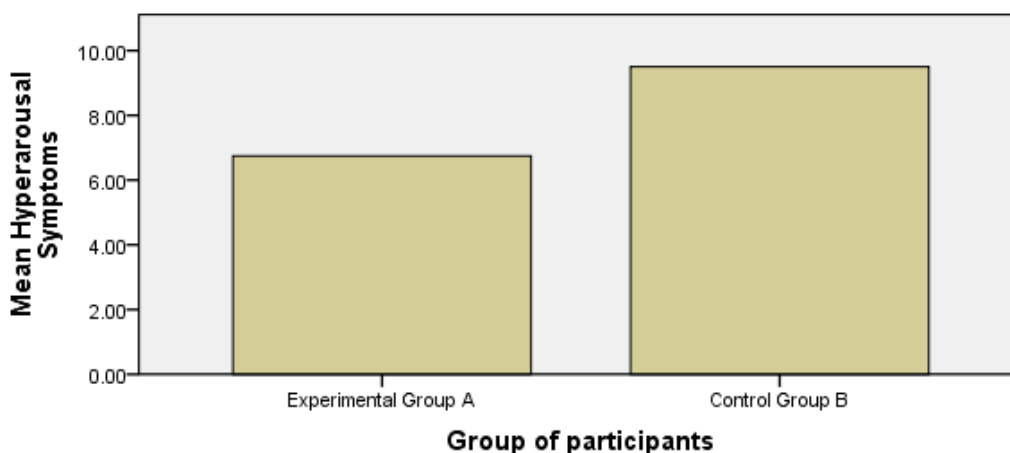


Figure 2. Bar graph showing the difference in hyperarousal symptoms between the experimental and control group after intervention

Hypothesis Three (HO<sub>3</sub>):

There is no significant difference between post-test avoidance mean scores of students exposed to psycho-education intervention and those who were not.

As shown in table 3, result obtained after testing this hypothesis showed that there was significant difference in the post-test avoidance mean scores of students exposed to psycho-education intervention (Mean= 9.850, Standard

deviation = 2.814, Standard error = .630) and those who were not exposed to the intervention (Mean = 18.000, Standard deviation = 7.004, Standard error = 1.567),  $t(38) = -4.830$ ,  $p = .0001$  (two-tailed), Effect size is  $r = .620$ - which shows the strength of this difference. Therefore the null hypothesis of no significant difference was rejected. The difference is also presented in Fig 3.

Table 3: Independent sample *t*-test showing the difference between the post-test avoidance symptoms mean scores of students in the experimental and control group

Experimental Conditions	Mean	Mean Difference	t	df	SD	SE	Effect Size (r)	Sig.
Experimental Group	9.850				2.814	.630		
Control Group	18.00	-8.150	-4.829	38	7.004	1.567	.620	.0001

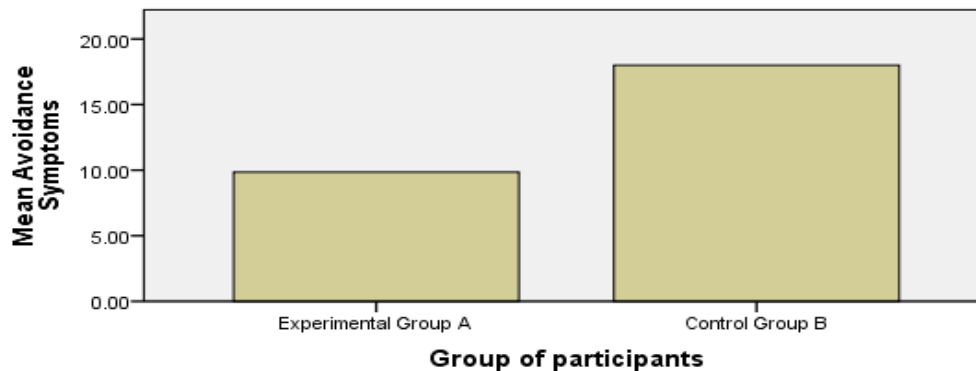


Figure 3. Bar graph showing the difference in avoidance symptoms between the experimental and control group after intervention

### Discussion

The current study addresses several significant pitfalls in the literature on posttraumatic stress disorder and child development. Unlike many other studies of treatment of PTSD symptoms, the current study examined the effects of psycho-education intervention on posttraumatic stress disorder symptoms among secondary school students exposed to conflict in Kano metropolis, Nigeria. There is high tendency that secondary school students in Kano metropolis who have been affected by conflict are likely to develop PTSD which can impair their general wellbeing, concentration level in school and migration of students to other geographical zone. The aim of the study was to determine whether students who received the psycho-educational intervention had their PTSD symptoms reduced compared to students who did not receive the intervention.

Also, results from the study showed that there was significant difference between post-test re-experiencing mean scores of students exposed to psycho-educational intervention and those who were not. This finding is in the view of Rowe, Sperlich, Cameron and Song (2014) whose study revealed differences in mean scores between participants in the intervention group and participants in the observational group. The post-test mean scores of students exposed to psycho-education intervention showed a difference from the scores from those who were not exposed to the intervention.

Another result from the study revealed that there was significant difference between post-test hyper-arousal mean scores of students exposed to psycho-education intervention and those who were not. This finding is in consonance with the study of Levy-Frank, Hassan-Ohayon, Kravetz and Roe (2012) where they reported psycho-education intervention to be beneficial to participants. The study revealed differences in mean scores between participants in the intervention group and participants in the observational group. The post-test mean scores of students exposed to psycho-educational intervention showed a difference from the scores from those who were not exposed to the intervention.

Further findings from the study showed that there was significant difference between post-test avoidance mean scores of students exposed to psycho-educational intervention and those who were not. This result is consistent with the finding of Brown, Bollini, Craighead, Astin, Norrhol and Bradley (2014) whose study revealed significant decrease in avoidance symptoms from pre-test to post-treatment of two experimental groups after a psycho-education intervention.

### Conclusion

Secondary school students who are exposed to traumatic event are predisposed to develop PTSD symptoms and other trauma related disorders. The current study presents a significant contribution to the literature of the effectiveness of psycho-educational intervention for the treatment of conflict PTSD symptoms. Unlike the majority of existing PTSD interventions, the psycho-educational intervention is design to equip secondary school students with knowledge of the symptoms, coping skills and to provide support to peers who might exhibit PTSD symptoms. The efficacy of the psycho-educational intervention in reducing PTSD symptoms could serve as a springboard for subsequent intervention with young people who exhibits PTSD symptoms caused by other traumatic events such as natural disaster, domestic violence and any other violent related activities.

The findings from the study have many implications for educational psychologists, researchers and mental health practitioners who provide psycho-education to conflict-affected students. The most encouraging finding for educational psychologists is that the effectiveness of psycho-education was confirmed in conditions that are reflective of educational and psychological practice. The findings from this study also indicated that researchers can communicate that if conflict-affected students participate in the psycho-educational sessions they can expect a modest improvement in PTSD symptoms exhibited by them.

However, the effect of the intervention was determined largely on the extent to which it has reduced PTSD symptoms exhibited by secondary school students. The study showed that a long term treatment modality may not be necessary to reduce PTSD symptoms sufficiently for secondary school students exposed to conflict to benefit. In consistent with previously conducted studies, the findings of this study indicated that a short-term treatment of PTSD symptoms can be effective.

Also, the efficacy of the psycho-educational intervention in this study was established on the extent to which it has improved conflict-affected students' well-being and the development of positive mental health. The psycho-educational intervention would serve as an evidence-based coping strategy that should be incorporated into the school curricula. The intervention would equip students with skills and knowledge necessary to provide psychosocial support to students who may later experience traumatic stressors in the future.

Lastly, findings from this study have important implications for improving the mental health of SSI students in secondary school in Nigeria. The study showed that most SSI students who completed the psycho-educational treatment sessions can expect a noticeable improvement in PTSD symptoms reduction. The researcher also found that the psycho-educational treatment modality was effective and successful in reducing PTSD symptoms exhibited by secondary school students affected by conflict in Kano metropolis, Nigeria. Therefore, as an effective intervention, it should be used adequately to treat students suffering from the symptoms of PTSD.

### Recommendations

Based on the findings of this study, the following recommendations are offered:

1. The study showed that a short-term treatment may be effective to reduce PTSD symptoms experienced by conflict-affected students; therefore, it was recommended that the psycho-educational intervention should be used for the treatment of SSII students who exhibited PTSD symptoms.
2. The psycho-educational models should be included in school-based interventions for the treatment of students who exhibits trauma related stress especially posttraumatic stress symptoms.
3. Considering the results of the current study, school curriculum should include up-to-date knowledge of PTSD symptoms and effective treatment modality.
4. Educational psychologists and other mental health practitioners should be properly trained in the psycho-educational procedures so that they can effectively help students suffering from PTSD.
5. It is also recommended that schools in the country should consider imbuing the psycho-educational treatment models into their curriculum.

### Funding

The author received no financial support for the research, authorship, and/or publication of this article.

### Acknowledgement

The author highly appreciate the efforts of the Tertiary Education Trust Fund (TETFUND) for sponsoring my trip to Istanbul, Turkey to participate in the conference



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