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RELIABILITY AND VALIDITY OF THE UCLA PTSD REACTION INDEX FOR DSM-IV IN THE NIGERIAN CONTEXT

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ABSTRACT

The purpose of this study was to determine the reliability and validity of the UCLA PTSD Reaction Index in the Nigerian context. To this end, two samples were drawn: 243 students from UniJos and 80 students from JETS Seminary. All participants completed the UCLA PTSD Reaction Index and a measure of traumatic events that participants had experienced in ethno-religious violence. The internal consistency of the UCLA PTSD Reaction Index was excellent, around .90. A significant positive correlation was also found between scores on the UCLA PTSD Reaction Index and number of traumatic events experienced, providing validity evidence for the instrument. A high rate of PTSD was found amongst the participants. The UCLA PTSD Reaction Index was judged an adequate instrument for clinical and research purposes in Nigeria.

INTRODUCTION

In recent years, Nigeria has been plagued by violence: kidnapping in the south, terrorist attacks in the north, and ethno-religious violence in the middle belt. Human Rights Watch (2013) estimates that about 3,000 individuals have lost their lives since 2009 as a result of the Boko Harm conflict in the North. Boko Haram has carried out gun attacks, bomb attacks, and suicide bombings as well as burnt schools, bombed newspaper offices, and targeted politicians (Human Rights Watch, 2012). In Plateau State, more than 3,800 lives have been lost from over ten years of ethno-religious violence (Human Rights Watch, 2011). These crises have resulted in lost lives as well as destruction of countless houses, churches, mosques, and businesses (Ostien, 2009). The Niger Delta has many protest groups, some of which are extremely violent in their attempts to steal oil and in kidnap both for political and financial purposes (Paden, 2013).

The negative consequences of these violent conflicts are not just limited to the physical loss of lives or destruction of property. Survivors of violent conflicts are typically mentally affected by the violence that they experience or witness. This emotional cost of violent conflict can be just as distressing to survivors as the physical costs.

Post-traumatic stress disorder (PTSD) is a mental health condition that a person can develop after experiencing a horrifying event such as violent crisis, armed robbery, bombing, rape, or a severe automobile accident. Formally, PTSD consists of a protracted response to an extremely stressful or threatening event

(World Health Organization, 2010). A person can also develop PTSD after witnessing something frightening, such as seeing another person being tortured, raped, or killed. After suffering a traumatic event, individuals typically experience anxiety and distorted thoughts. After a few weeks, though, the emotional pain typically disappears gradually. However, for some people, these feelings can get worse or last for many months.

There are three different types of symptoms that constitute PTSD (Mash & Wolfe, 2002). The first type is re-experiencing symptoms, such as having flashbacks or bad dreams about the trauma. These flashback symptoms are oftentimes triggered by something related to the traumatic experience. The second type is called hyper-arousal symptoms. These symptoms include being easily frightened, continuously feeling tense, having difficulty sleeping, or having angry outbursts. The final type is avoidance symptoms. This means that a person will try to avoid situations or emotions that might cause anxiety or fear. These symptoms include avoiding places, events, or objects that are reminders of the frightening experience; feeling emotionally numb; feeling guilt, depression, or worry; losing interest in activities that were previously enjoyable; or having difficulty remembering the traumatic event.

PTSD is diagnosed when all three types of symptoms – re-experiencing, hyper-arousal, and avoidance – are still manifest after one month has passed from the date of the traumatic event (Mash & Wolfe, 2002). Having PTSD can disrupt a person's life because they generally have a hard time doing tasks necessary for daily living, such as sleeping or eating. This can cause physical health to decline. Furthermore, a person experiencing PTSD generally has difficulty concentrating, which can hurt work and relationships with friends and family.

The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index for DSM-IV (hereafter called UCLA PTSD Reaction Index) is a paper and pencil questionnaire that assesses both exposure to traumatic events and post-traumatic stress symptoms amongst children and adolescents (Steinberg, Brymer, Decker, & Pynoos, 2004). The goal of instrument design was to develop items that were clear and easy for young respondents to understand. Because this particular study is interested in the assessment of PTSD, the scales that assess exposure to traumatic events (Parts I and II of the UCLA PTSD Reaction Index) were not used. The focus of this study was on Part III of the UCLA PTSD Reaction Index that evaluates the frequency of PTSD symptoms during the past month. This section directly assesses the DSM-IV criterion for PTSD: intrusion (called re-experiencing on the UCLA PTSD Reaction Index), avoidance, and arousal. The instrument was developed primarily for research purposes, not as a diagnostic tool for clinicians. However, the authors report that the instrument can provide preliminary diagnostic information for PTSD.

The UCLA PTSD Reaction Index has been the most widely used assessment tool for PTSD in clinical and research purposes amongst children (Steinberg et al., 2004). According to the authors (Steinberg et al., 2004), the instrument has primarily been used after natural disasters such as earthquakes in Armenia, Turkey, Greece, Taiwan, and the United States. It has also been used after large-scale political violence in Bosnia and Herzegovina, Mozambique, Kuwait, Israel, Palestine, and Lebanon. The validity of the UCLA

PTSD Reaction Index has been supported by studies that have found higher scores among individuals exposed to traumatic events as compared to those who have not been exposed to traumatic events (e.g., Goenjian et al., 2001). Strong reliability has been found with internal consistency around 0.90 (e.g., Roussos et al., 2005). The test-retest reliability has also been strong, around 0.90 (Steinberg et al., 2004). In conclusion, the UCLA PTSD Reaction Index has been found to be a useful tool for conducting needs assessment, screening, clinical evaluation, and treatment outcome evaluation after a range of traumatic events and in a range of cultures (Steinberg et al., 2004).

However, the reliability and validity of the UCLA PTSD Reaction Index for use in the Nigerian context has not been established. With the increase in ethno-religious and community violence throughout Nigeria, the possibility of high rates of PTSD presents a very real mental health threat. Therefore, research needs to be conducted to determine whether the UCLA PTSD Reaction Index could be a valid and reliable instrument to use in the Nigerian context, particularly amongst youth who are most affected by this type of violence.

Purpose of Study

The purpose of this study was to determine the reliability and validity of the UCLA PTSD Reaction Index in the Nigerian context. To this end, three research questions were asked:

- What is the reliability of the UCLA PTSD Reaction Index? To answer this question, Cronbach's alpha was used as a measure of internal consistency.
- What is the validity of the UCLA PTSD Reaction Index? To answer this question, scores on the UCLA PTSD Reaction Index were correlated with the number of traumatic experiences that participants had suffered as a result of ethno-religious violence. This will give an index of construct validity because the more traumatic experiences a person has experienced, the more likely they are to develop PTSD (Mash & Wolfe, 2002).
- According to the UCLA PTSD Reaction Index, what is the rate of PTSD amongst participants?

To strengthen the results of this study, two samples were drawn. The first sample consisted of 200-level students at the University of Jos (UniJos). The two campuses of UniJos are located in border areas of Jos that are oftentimes directly affected when violent conflict erupts. The second sample consisted of 300-level students at Jos ECWA Theological Seminary Jos (JETS). While the seminary is adjacent to areas of Jos that are often affected by violence, the seminary campus itself tends to be relatively unaffected by violence. The students at UniJos completed the questionnaire in March 2013, about 18 months after the last major violent conflict in Jos metropolis, whereas the students at JETS completed the questionnaire in September 2013, about two years since the last major violent conflict. The results for both samples were calculated separately. If the results for the two samples are similar, then this provides stronger evidence to support the reliability and validity of the UCLA PTSD Index for use in the Nigerian context.

METHOD

Participants

The UniJos sample consisted of 243 students enrolled in 200-level in the Faculty of Education. These students were randomly selected from an education core course that all education students are required to complete. To achieve random sampling, this questionnaire, together with two other questionnaires, were randomly distributed to all education students for course credit. The sample consisted of 53% males and 42% females (5% missing). The average age of participants was 24.07 years, with 79% being under the age of 28.

The JETS sample consisted of 80 students in their 300-level. A majority of the students were enrolled in pastoral studies, with a large minority enrolled in educational studies. A small number of students were enrolled in mission studies or youth ministry. All students completing the 300-level research methods course were required to complete the questionnaire. The sample consisted of 79% males and 9% females (13% missing). The average age of participants was 34.00 years, with only 33% under the age of 29. Thus, the JETS sample had considerably more men than the UniJos sample, and was also considerably older.

Instrument

The UCLA PTSD Reaction Index has five sub-scales. The first two sub-scales assess traumatic events that a person has been exposed to. However, not all of these traumatic experiences are related to the types of traumatic events that this study targetted. For example, many of the items ask whether participants have experienced a big earthquake, tornado, or scary medical treatment in a hospital. Therefore, these sub-scales were not used. The focus of this study was on the three sub-scales (Criterion B, Criterion C, and Criterion D) that measure the PTSD symptoms as identified by the DSM-IV: re-experiencing, avoidance, and increased arousal.

The first sub-scale (Criterion B on the UCLA PTSD Reaction Index) measured re-experiencing symptoms. Five items measured whether participants have experienced intrusive recollections, bad dreams, flashbacks, psychological reactivity, or physiological reactivity. A sample item is, "I have upsetting thoughts, pictures, or sounds of what happened come into my mind when I do not want them to."

The second sub-scale (Criterion C on the UCLA PTSD Reaction Index), measured avoidance symptoms. Nine items measured whether participants avoided thoughts/feelings related to the trauma, avoided activities/people, experienced forgetting, diminished interest, detachment, restricted affect, or foreshort future. A sample item is, "I have trouble feeling sadness or anger."

The third sub-scale (Criterion D on the UCLA PTSD Reaction Index) measured increased arousal symptoms. Six items measured whether participants have sleep problems, irritability/anger, concentration problems, hypervigilance, or exaggerated startle. A sample item is, "I feel jumpy or startle easily, like when I hear a loud noise or something surprises me."

The directions stated that participants were going to read a list of problems that people sometimes have after traumatic things happen. They were instructed to think about communal violence (i.e., crisis) that they have experienced and circle how often the problem has happened to them in the past month. Participants re

sponded on a 5-point scale from 0 None, 1 Little, 2 Some, 3 Much, 4 Most.

To measure the number of traumatic experiences that participants had experienced from crisis, an adaptation was made of the War Trauma scale from the Survey of War-Affected Youth that assesses the experiences of violence that youth experienced in the conflict in Uganda between the Lord's Resistance Army (LRA) and the government (Annan, Blattman, & Horton, 2006). The original scale listed 20 potential events from this conflict and participants were to respond either yes or no as to whether they had ever experienced that event. For the purpose of this study, some of the events that are not common in ethno-religious violence in Nigeria were removed (e.g., "You witnessed an attack by the LRA or battle with UPDF" and "You were forced to carry heavy loads or do other forced labor"). Other items were revised to fit the Nigerian conflicts (e.g., "Someone attacked you with a panga or other weapon" was revised to "Someone attacked you with a machete or other weapon"). A few items were added that are unique to Nigeria's ethno-religious violence (e.g., "Your place of worship was destroyed" and "Someone destroyed your living accommodation"). The resulting scale had a total of 20 items where participants indicated whether they had experienced any of the events during an ethno-religious crisis by circling either yes or no.

Procedures

For both samples, questionnaires were distributed to students during one class period. Students were given directions by the lecturer for completing the questionnaire, including that their responses would be kept confidential. Students took the questionnaires as homework and returned them to the course lecturer at a later class session. Students received course credit for completing the questionnaire, though they were assured that their course grade would not be affected by their responses on the questionnaire. Instead, they were given credit only for returning the questionnaire on time.

RESULTS

The first research question asked, "What is the reliability of the UCLA PTSD Reaction Index?" To answer this research question, Cronbach's alpha was used to determine the internal consistency of the instrument, both on the total score and on the sub-scales that measure symptoms of re-experiencing the crisis, avoidance, and arousal. The results are presented in Table 1. Note that the sample size for each reliability index differs due to missing scores. If a participant did not complete one item on the scale, then their scores were removed for calculating the alpha for that particular scale (i.e., pairwise deletion).

The reliability of the overall PTSD Reaction index for both samples is adequate, .88 and .89, which is considered excellent reliability. As can be seen in Table 1, the avoidance sub-scale had the highest reliability and the arousal subscale had the lowest reliability for both samples. Generally, a value of .60 or higher is considered acceptable for an instrument. The only value that fell below this acceptable score was the arousal sub-scale for the JETS students. However, as the value for the larger sample at UniJos was above the accepted value, this can be considered adequate.

Table 1. Reliability of UCLA PTSD Reaction Index

	UniJos		JETS	
Scale	Alpha	N	Alpha	N
Re-Experience	.77	223	.69	71
Avoidance	.78	228	.84	71
Arousal	.62	227	.57	73
Total	.88	204	.89	63

The results in Table 1 provide evidence that the UCLA PTSD Reaction Index has adequate internal consistency to be used in the Nigerian context.

The second research question asked, "What is the validity of the UCLA PTSD Reaction Index?" This research question was answered by the correlation between PTSD total scores and the number of traumatic events that participants had experienced. The results are presented in Table 2.

Table 2. Correlation between PTSD and Number of Traumatic Events Experienced

	r	t	Df	P	Decision
UniJos	.22	3.47	240	.001	Significant
JETS	.30	2.77	77	.007	Significant

As can be seen from Table 2, the correlation between PTSD as measured by the UCLA PTSD Reaction Index and the number of traumatic events that participants had experienced from ethno-religious violence is significant. The positive correlation indicates that the more traumatic events that a person has experienced, the more PTSD symptoms they exhibit. This provides strong construct validity evidence for the UCLA PTSD Reaction Index.

The third research question asked, "According to the UCLA PTSD Reaction Index, what is the rate of PTSD amongst participants?" To answer this research question, the diagnostic criteria were followed according to the UCLA PTSD Reaction Index Scoring Worksheet. To be diagnosed with PTSD, a person should have at least one re-experiencing symptom, two increased arousal symptoms, and three avoidance symptoms in the past month. The cutoff score was that they should have experienced the symptom either much of the time or most of the time in the past month by ticking either 3 or 4 on the questionnaire. The results are presented in Table 3.

Table 3. Rate of PTSD amongst Students of Tertiary Institutions

	Re-Experience	Arousal	Avoidance	**Total**
UniJos	69.1%	44.4%	52.3%	**31.3%**
JETS	62.5%	32.5%	27.5%	**18.8%**

Table 3 shows that about 31% of UniJos students and 19% of JETS students could be diagnosed with post-traumatic stress disorder. In both samples, the highest PTSD symptom was re-experiencing, with a majority of respondents indicating that they have had flashbacks or bad dreams about their experiences from ethno-religious crisis either much or most of the time in the past month. In the UniJos sample, about half of the participants indicated experiencing arousal and avoidance symptoms of PTSD much or most of the time in the past month. However, for the JETS sample, only around 30% of the participants reported likewise.

Discussion

The purpose of this study was to determine the reliability and validity of the UCLA PTSD Reaction Index in the Nigerian context. The reliability of the index was adequate. In comparison, the internal consistency of UCLA PTSD Index with a sample of Somali refugee youth living in the United States was .85 (Ellis, Lhewa, Charney, & Cabral, 2006). This is similar to the internal consistency that was found in this study. Therefore, there is strong evidence that the UCLA PTSD Reaction Index is a reliable instrument in the Nigerian context.

Second, a significant positive correlation was found between the number of traumatic events that a person had experienced and severity of PTSD symptoms. Amongst the Somali refugee youth, the correlation with number of traumatic events was .59 (Ellis et al., 2006). The cumulative trauma model suggests that the development of PTSD is related to experiencing a higher number of traumatic events (Briere, Kaltman, & Green, 2008). Therefore, the positive correlation between traumatic events and scores on the UCLA PTSD Reaction Index provides construct validity evidence for the use of the instrument in the Nigerian context.

Finally, the study found that 31% of the UniJos participants and 19% of the JETS students could be diagnosed with PTSD. In comparison, research conducted by the RAND Corporation found that only 14% of American soldiers who have returned from the wars in Iraq and Afghanistan are diagnosed with PTSD (Tanielian & Jaycox, 2008). In other words, more youth who simply live in a community that experiences frequent episodes of ethno-religious violence have developed PTSD than soldiers who spend months in an active combat zone. This finding should be cause for concern for mental health practitioners in Nigeria.

Recommendations

Because the UCLA PTSD Reaction Index was found to have strong reliability and validity evidence for use in the Nigerian context, this instrument can be used for clinical and research purposes in

Nigeria, particularly in relation to communal violence.

The finding that 31% and 19% of the respondents could be diagnosed with PTSD should prompt immediate decisive action by clinicians and researchers. First, more research needs to be conducted to establish the incidence of PTSD amongst those exposed to communal violence in the north, south, and middle belt of Nigeria. Likewise, this study focused on youth, so more research should examine the rate of PTSD amongst adults and children. The finding in this study of the high rate of PTSD should be taken cautiously as the UCLA PTSD Reaction Index was not developed as a diagnostic tool. On the other hand, since the authors report that the instrument can provide preliminary diagnostic information, this finding should prompt further research. A full clinical interview should be used to make a proper diagnosis of PTSD.

Additionally, researchers and clinicians need to seek options for treatment for the many people who experience traumatic events in Nigeria. Treatment for PTSD can include psychoeducation about trauma's impact on a person and how to manage the resulting stress, discussions of thoughts and feelings about the trauma, teaching and reinforcing adaptive coping and safety behaviors, and cognitive-behavioral therapy (Brymer, Steinberg, Vernberg, Layne, Watson, Jacobs, Ruzek, & Pynoos, 2009). Research should identify which of these treatment options, as well as others, is most effective in reducing the emotional impact of trauma on survivors of communal conflict.

Conclusion

In conclusion, this study provides evidence that the UCLA PTSD Reaction Index is a reliable and valid tool for assessing post-traumatic stress disorder amongst Nigerian youth exposed to communal violence. Furthermore, this study found a very high rate of PTSD amongst youth. Therefore, researchers and clinicians need to engage in more research to examine the rate of PTSD amongst those affected by communal violence, as well as identifying effective treatment for those so affected.

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