

Testing the factor structure of the International Trauma Questionnaire (ITQ) in African
community samples from Kenya, Ghana and Nigeria.

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The aim of this study was to test the factorial structure of Posttraumatic Stress Disorder (PTSD) and Complex PTSD (CPTSD) as outlined in the 11th revision of the International Classification of Diseases (ICD-11) in three African community samples using the International Trauma Questionnaire (ITQ). Four models were tested using confirmatory factor analysis based on a total sample of 2,524 participants and the two-factor second order model, representing PTSD and Disturbances in Self-Organisation (DSO), was the best fitting model. The factors were validated using demographic and trauma-related variables, supporting the use of the ITQ for English-speaking participants in these African countries.

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Testing the factor structure of the International Trauma Questionnaire in community samples from Africa.

In the 11th revision of the World Health Organization's (WHO, 2018) International Classification of Diseases (ICD-11), two distinct but related stress disorders were proposed: Posttraumatic Stress Disorder (PTSD) and Complex PTSD (CPTSD; WHO, 2018). A diagnosis of PTSD is based on three symptom clusters resulting from exposure to a traumatic event(s): re-experiencing of the trauma in the present (Re), avoidance of traumatic reminders (Av) and a persistent sense of threat that manifests in increased arousal and hypervigilance (Th). A diagnosis of CPTSD, in addition to the three clusters of PTSD, requires endorsement of symptoms that reflect disturbances in self-organisation (DSO). These are affective dysregulation (AD), negative self-concept (NSC) and disturbances in relationships (DR). Several studies suggest that CPTSD arises in conditions of cumulative trauma, early developmental trauma, and interpersonal trauma (Cloitre et al., 2014; Karatzias et al., 2017; Karatzias et al., 2019).

Very few studies on PTSD currently exist from African countries (Rasmussen et al., 2007). This may be attributable to (1) comparatively low levels of provision of mental health care in Africa (Ofori-Atta et al., 2010), (2) treatment relying on spiritual practices and rituals (Mbwayo et al., 2013; Chukwuemeka, 2009), and (3) a more collectivist culture (Henrich et al., 2010). For example, 'Ubuntu' is African worldview emphasising collective unity, group solidarity and compassion and placing the needs and problems of the group before individual needs (Atwoli et al., 2015; Wilson & Williams, 2013); individual psychological assessment would be inconsistent with such a cultural view. Furthermore, Patel (1995) noted that many African cultures focus less on the cognitive aspects of psychological

disorders, and more on behavioural and somatic features. This is an aspect of what Kortmann (1990) described as “problems in transcultural communication” and noted the many problems associated with applying western diagnostic concepts in African cultures. Because of these sociocultural complexities differentiating European and African cultures, there is a need to assess standardised measures of PTSD that are meant for global use.

For the measurement of ICD-11 PTSD and CPTSD the *International Trauma Questionnaire* (ITQ; Cloitre et al., 2018) was developed and has since been used widely with community and clinical samples (Ben-Ezra et al., 2018; Karatzias et al., 2017; Shevlin et al., 2018). Over the past few years, psychometric studies of PTSD and CPTSD based on the ITQ have supported a two factor second-order model of the latent structures of the ITQ with PTSD and DSO symptoms representing two distinct dimensions as proposed by the ICD-11 (Hyland et al., 2017a; Hyland et al., 2017b). However, most of these studies were based on participants from samples from the UK, USA, Germany and other western countries. Given that the aim of ICD-11 is to provide universal diagnostic standards it is imperative that assessment tools used by researchers and clinicians are validated on culturally diverse samples. Low and medium income countries, including those in Africa, have been reported to face a scarcity of data being gathered when examining mental health (Reuter et al., 2016; Sankoh et al., 2018; Sharan et al., 2009) which contributes to the problem of validating and standardising measures for global use.

The present study seeks to examine whether previous findings about the latent structure of the ITQ are consistent in community samples from three African countries. Additionally, the validity of the ITQ was assessed by examining the association between the PTSD and DSO dimensions and demographic and trauma variables. The goal of the study

was to test if established models of PTSD and CPTSD are applicable in African samples and to serve as a basis for future examinations of these disorders in Africa.

Methods

Participants

The sample for this study comprised 2,524 participants recruited from Nigeria (n = 1006), Kenya (n = 1018) and Ghana (n = 500). Females made up 49.6% (n = 1251) of the total sample, 55.5% were in full time employment, and most (91%, n = 2320) had a university education. The mean age of the sample was 30.75 years (SD = 8.93). Following ethical approval from the lead researchers' University (MBE), eligible participants were invited to participate in the study via online survey. Each participant signed an electronic informed consent before accessing the questionnaire. Eligibility for participating in the study necessitated a citizenship of one of the aforementioned countries (Nigeria, Kenya, Ghana) and being aged 18 year and above. Country specific information is presented in Table 1.

[Table 1]

Measures

Life Events Checklist: The Life Events Checklist for DSM-5 (LEC-5: Gray et al., 2004) is a 16 item self-report measure that aims to screen for exposure to lifetime traumatic events. For each item, representing a traumatic event (e.g. natural disaster, physical assault etc.), the participant is presented with a dichotomous choice (1= experienced the event, 0 = did not experience the event) indicating whether the event was experienced. A sum total of the trauma exposure can be calculated (ranging from 0 to 16).

The International Trauma Questionnaire (ITQ; Cloitre et al., 2018) was developed as a self-report assessment tool for ICD-11 PTSD and CPTSD. It is comprised of 12 items, 6 items measuring PTSD symptoms and 6 items measuring DSO symptoms. Each item is responded to using a 5 point Likert scale ranging from 'Not at all' (0) to 'Extremely' (4). Two items measure each of the 'Re-experiencing' cluster ('Upsetting Dreams' and 'Reliving event in the here and now'), the 'Sense of threat' cluster ('Being on guard' and 'Feeling Jumpy/Startled'), and the 'Avoidance' cluster ('internal' and 'external' reminders). Similarly, 2 items were used to measure each of the three DSO symptom clusters: Affective Dysregulation ('Long time to calm down' and 'Numb'), Negative Self-concept ('Failure' and 'Worthless'), and Disturbances in Relationships ('Feel cut-off from others' and 'Difficulty staying close to others'). Possible scores for both subscales range from 0 to 24. Cronbach's alpha was satisfactory for both PTSD ($\alpha=.845$) and DSO ($\alpha=.886$) scales when considering entire sample and sub-samples from each individual country. Endorsement for items is based on scores of 2 or greater.

Data Analysis

The analysis was conducted in two linked phases. Phase 1 tested the fit of four alternative factor analytic models of the latent structure of PTSD and DSO items using confirmatory factor analysis (CFA); these were based on the best fitting models from Hyland et al., (2017). The models are shown in Figure 1. Model 1 is a correlated first order six-factor model. Model 2 specified two correlated second-order factors (PTSD and DSO) to explain the covariation among the six first-order factors, with Re, Av and Th loading on the PTSD factor and AD, NSC and, DR loading on the DSO factor. Model 3 replaced the factor correlations in

Model 1 with a single second-order factor representing CPTSD. Model 4 is a one-factor model where all items load on a single CPTSD latent variable.

Figure 1 here

Mplus version 6.12 (Muthén & Muthén, 1998) was used to conduct the CFA analyses. Robust maximum likelihood estimation (MLR; Yuan & Bentler, 1997) as this is superior to other estimators, such as weighted least square with mean and variance adjustment, when there are five or more ordered categories (Beauducel, & Herzberg, 2006), and MLR produces correct standard errors and test statistics compared to maximum likelihood (Finney & DiStefano (2006). The fit for the different models was based on the chi-square statistic, the Comparative Fit Index (CFI; Bentler, 1990) and Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) with values $> .90$ indicative of acceptable fit and greater than $.95$ excellent, fit; the Root Mean Square Error of Approximation (RMSEA) with values less than $.05$ indicating excellent fit, and $.05$ to $.08$ indicating acceptable fit (Browne & Cudeck, 1993). For the Standardised Root Mean Square Residual (SRMR) values less than $.05$ are indicative of acceptable fit (Byrne, 2013). The Bayesian Information Criterion (BIC) is used for model comparison and the model with the lower value is deemed better-fitting (Raftery, 1995).

Phase 2 aimed to identify the significant demographic and trauma related factors that were associated with the latent variables identified in Phase 1. After determining the best fitting model, predictor variables were added to the model including demographic (sex, age, country of origin, employment, university status and living in an urban area) and individual items from the LEC.

Results

For the entire sample, the mean number of types of lifetime traumatic events was 3.7 (SD = 3.04) with the most commonly reported event being 'Physical assault' (n = 1307, 51.8%) and 'Transportation accidents' (n = 1068, 42.3%). 'Captivity' was the least commonly endorsed event (n = 133, 5.3%). Breakdown of individual event endorsements for the total sample as well as individual countries is provided in Table 2.

[Table 2]

Mean scores of the PTSD scale was 11.02 (SD = 6.16) and 'Being on guard' was the most frequently endorsed symptom (87%). Mean scores for the DSO scale was 8.26 (SD = 6.38) and the most endorsed symptom was 'Long time to calm down' (48.8%). Endorsement of item was established based on scores equal to or greater than 2 ('Moderately').

Endorsement rates and mean scores for PTSD and DSO symptoms are presented in Table 3 and Table 4.

[Tables 3 and 4]

Model fit statistics are presented in Table 5. The two-factor 2nd order model was consistently the best fitting model in each country. Across the three countries, the one-factor 2nd order model, and the unidimensional model, had CFI and TLI values below .95, RMSEA values of above .08 and SRMR values above .05. Taken together, these result suggest that these models have less-than-ideal fit to the sample data. Comparing the two-factor 2nd order model and the correlated model, the BIC index was lower for the two-factor 2nd order model suggesting that it represents the best model.

[Table 5]

Table 6 presents factor loadings of individual ITQ items onto the specific factors of PTSD (Re, Av, and TH) and DSO (AD, NSC and DR). Tabachnick and Fidel (2007) suggest that factor loadings above .32 are adequate. All loadings satisfied this condition and were statistically significant ($p < .01$), further supporting the fit of the two factor second-order model to the data.

[Table 6]

The second phase of the analysis was to determine the extent to which different types of trauma can predict the endorsement of PTSD/CPTSD symptoms. To this end, the individual LEC items and demographic variables factors were added to the CFA model as predictors of the PTSD and DSO factors. A separate analysis was conducted for the sum total of LEC item endorsement. The results of the regression models are presented in Table 7.

[Table 7]

The R-squared showed that the predictors explained 24.4% ($p < .01$) and 19.2% ($p < .01$) of the variance in the PTSD and DSO latent variables respectively. Full time employment, university education, and living in an urban area were the only demographic factors that did not significantly predict the PTSD or DSO latent variables. 'Fire or explosion', 'Transportation accidents', 'Exposure to toxic substances', 'Combat or exposure to a war-zone', 'Sudden, violent death', 'Serious injury, harm or death you caused to someone else' all showed nonsignificant effects for both PTSD and DSO symptoms. Out of the LEC items, 'Physical assault' presented the strongest effect on PTSD ($\beta = .17, p < .01$) and 'Other unwanted or uncomfortable sexual experience' and 'Severe human suffering' both presented the same effect ($\beta = .13, p < .01$) and were the strongest for the DSO factor. Age showed a negative effect on endorsement of the PTSD latent variable ($\beta = -0.157, p < .01$), a larger effect than for

the DSO latent variable ($\beta=-0.076$, $p<.01$). 'Natural disaster' ($\beta=0.066$, $p<.01$), 'Assault with a weapon' ($\beta=0.081$, $p<.01$) and 'Sudden, unexpected death of someone close to you' ($\beta=0.076$, $p<.01$) were significant only for the PTSD factor. 'Captivity' ($\beta=-0.053$, $p<.05$) shown significant effect for DSO factor uniquely. Total LEC scores, obtained using a separate regression model, showed significant effects for PTSD ($\beta=0.405$, $p<.01$) and the DSO ($\beta=0.287$ $p<.01$) factors

Discussion

The present study is the first examination of ICD-11 defined PTSD and CPTSD models in national samples of African populations. It provides information regarding whether these models, validated mostly on European and Northern American populations, are a valid way to conceptualise PTSD and CPTSD in culturally and demographically different setting. Findings of the study suggest that the latent structures of PTSD and CPTSD are not different from those validated in the European samples. Model fit for 4 models was tested using CFA. Results were validated using regression modelling and examined whether traumatic events predicted PTSD and DSO factors while controlling for demographic variables as well as age and sex with results suggesting that the ITQ can be used to assess PTSD and CPTSD in African countries despite the sociocultural differences.

Internal consistency for the PTSD and DSO items was consistently greater than .80 which is suggestive of good (close to excellent) model fit (Cronbach, 1951). The two-factor 2nd order model was found to have the best fit, supported by fit indices and further supported by factor loadings, followed by a model including six correlated first-order factors. These findings are similar to Karatzias et al. (2017a) who found their corresponding models to be in similar model fit relationship. Their study however contained two

substantial differences when compared to the current examination. First, they have used a sample of individuals that were referred for a psychological therapy in Scotland as opposed to a volunteer sample used in the present study. Second, the number of items measuring their PTSD and DSO factors differed to the present study (e.g. Affective Dysregulation factor was measured using 9 items as opposed to 2 in the present study). Nevertheless, 2 factor 2nd order model is both consistent with previous findings and provides a parsimonious representation of PTSD/CPTSD symptoms that persists in the current African sample. The second objective of the study was to determine whether individual items of the LEC scale as well as total LEC scores can predict latent variables representing PTSD and DSO. Differences for individual items were also observed. Items 'Natural disaster', 'Assault with a weapon' and 'Sudden, unexpected death of someone close to you' showed significant effects for PTSD symptoms only and 'Captivity' showed unique significance when considering the DSO symptom cluster. High total LEC scores being indicative of an individual going through many different traumatic events, positive effects were found for both PTSD and DSO symptom clusters. This suggests that, in line with previous research (Karatzias et al., 2017b), experiencing different types of trauma contributes to PTSD and DSO symptomatology. Findings of this study suggest that the latent structures of PTSD and CPTSD outlined in the ICD-11 are the same for African and European samples. Furthermore, the ITQ is a sufficient diagnostic tool for measuring PTSD and CPTSD symptoms.

The validity of these findings is further reinforced by the findings from the regression model. Being female was associated with increased levels of PTSD and CPTSD, and this is consistent with previous findings (Christiansen & Elklit, 2012; Tolin & Foa, 2008). The present study suggests that age is a protective factor for both PTSD and CPTSD. Previous findings with regards to age have shown mixed results (e.g. Karatzias et al., 2018; Dinenberg

et al., 2014). Norris et al. (2002) suggest that these inconclusive results could be the effect of cultural differences and the results of present examination should be interpreted in the light of previous inconsistencies. Significant differences between the three countries, both in endorsement of different types of traumatic events (Table 2) and PTSD and DSO symptom clusters (Tables 3 and 4), were observed. A significant difference in endorsement of the PTSD symptoms was observed when comparing samples from Nigeria and Ghana with the latter showing a slight negative effect (lower rates of PTSD when compared to Nigeria). The Ghana sample showed a smaller percentage of individuals having obtained higher education and being married, both previously suggested to be protective factors (Atwoli et al., 2015). Therefore, that the sample has shown a slight reduction in PTSD symptom prevalence stands in contrast to previous research findings. However, partly due to the limitations of the data collection, such as the lack of quantifiable social (e.g. GDP, recent violent conflicts, access to mental health services) and cultural (e.g. customs, beliefs) variables, these differences should warrant further examinations. When compared to Nigeria, the Kenyan sample showed significantly higher endorsement of the DSO symptom cluster. These differences might be explained by the differences in traumatic event exposure, with Kenyan sample showing higher rates of exposure to sudden deaths as well as a slightly higher overall LEC scores when compared to Nigeria (Table 2). This explanation would replicate previous examinations of symptom endorsement with experiences of sudden death scenarios being more frequently endorsed for samples satisfying the DSO symptom cluster (Ben-Ezra et al., 2018). Future research that accounts for country-specific events, previous involvement with mental health services and cultural differences could prove to be beneficial to clinical research in the African continent.

Some limitations should be noted. Data gathered for the purposes of this study came from three sub-Saharan countries – Kenya, Nigeria and Ghana. This, despite the considerable number of participants, may diminish the generalisability of the findings. Demographics of the sample may also not be representative of the general population of said countries with 91.9 % of the sample having obtained higher education. However, high education has been previously suggested to be negatively associated with PTSD symptom severity (Ullman & Filipas, 2001; Greenberg et al., 2014) therefore the severity of the symptoms might be higher in the general African population. The online survey mode of data collection chosen for this study carries with it a potential for bias. First, not all members of the population of the three surveyed countries had the same chance of participating in the survey, this was due to the pre-requirement of having access to the internet, which can be safely assumed as not being universal. Second, the participants were ‘self-selected’ – participants themselves decided to voluntarily take part in the study. These limitations mean that the samples were not representative of the populations and therefore generalisations are limited. In spite of the issues described above, the findings of this study suggest that ICD-11 delineated measurement and symptomatology of PTSD and CPTSD is an adequate approach to be utilised in African samples.

It is hoped that this study is a first of many to bridge the sampling gap between western, educated, industrialised countries and the rest of the world (Henrich et al., 2010). As outlined in the introduction, pathways to receive mental health care may differ for Africans when compared to Europeans, future examination of outcomes based on treatment received would be a welcome addition to the body of knowledge that is in part made available by the present examination.

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Table 1. Descriptive statistics for the demographic variables for the three countries.

	Ghana (N= 500)	Kenya (N=1018)	Nigeria (N=1006)	Total (N=2524)	χ^2 (df) p		
	n (%)	n (%)	n (%)	N (%)			
Married	228 (45.6 %)	553 (54.3 %)	565 (56.2 %)	1346 (53.3 %)	15.01	(2)	.001
Full time employment	260 (52.0 %)	567 (55.7 %)	575 (57.2 %)	1402 (55.5 %)	3.18	(2)	.204
University	442 (88.4 %)	922 (90.6 %)	956 (95.0 %)	2320 (91.9 %)	13.86	(2)	.001
Living in urban area	297 (59.4 %)	611 (60.0 %)	709 (70.5 %)	1617 (64.1 %)	23.35	(2)	.000
Sex (Female)	250 (50.0 %)	501 (49.2 %)	500 (50.0 %)	1251 (49.6 %)	0.14	(2)	.931
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	F (df) p		
Age (17-71)	28.96 (7.92)	30.14 (8.71)	32.23 (9.36)	30.75 (8.93)	F (2,2521) = 27.03, p< .000		

Table 2. Endorsement rates for the Life Events Checklist for the three countries.

Item	Ghana (N=500) n (%)	Kenya (N=1018) n (%)	Nigeria (N=1006) n (%)	Total n (%)	χ^2 (df) p
Natural disaster	143 (28.6)	294 (28.9)	203 (20.2)	640 (25.4)	26.51 (2) .000
Fire or explosion	104 (20.8)	255 (25.0)	257 (25.5)	616 (24.4)	4.397 (2) .111
Transportation accident	182 (36.4)	412 (40.5)	474 (47.1)	1068 (42.3)	15.45 (2) .000
Serious accident at work, home, or during recreational activity	143 (28.6)	277 (27.2)	332 (33.0)	752 (29.8)	6.66 (2) .036
Exposure to toxic substance	98 (19.6)	180 (17.7)	246 (24.5)	524 (20.8)	12.61 (2) .002
Physical assault	205 (41.0)	553 (54.3)	549 (54.6)	1307 (51.8)	29.26 (2) .000
Assault with a weapon	71 (14.2)	220 (21.6)	245 (24.4)	536 (21.2)	19.92 (2) .000
Sexual assault	104 (20.8)	184 (18.0)	263 (26.1)	551 (21.8)	17.27 (2) .000
Other unwanted or uncomfortable sexual experience	142 (28.4)	319 (31.3)	267 (26.5)	728 (28.8)	7.47 (2) .024
Combat or exposure to a war-zone	19 (3.8)	116 (11.4)	156 (15.5)	291 (11.5)	43.67 (2) .000
Captivity	13 (2.6)	53 (5.2)	67 (6.7)	133 (5.3)	10.65 (2) .005
Life-threatening illness or injury	144 (28.8)	286 (28.1)	230 (22.9)	660 (26.1)	11.193 (2) .004
Severe human suffering	91 (18.2)	179 (17.6)	193 (19.2)	463 (18.3)	0.467 (2) .792
Sudden, violent death	36 (7.2)	165 (16.2)	104 (10.3)	305 (12.1)	32.22 (2) .000
Sudden, unexpected death of someone close to you	81 (16.2)	248 (24.4)	202 (20.1)	531 (21.0)	15.83 (2) .000
Serious injury, harm or death you caused to someone else	47 (9.4)	101 (9.9)	72 (7.2)	220 (8.7)	5.97 (2) .051
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Total # LEC endorsements	3.25 (2.93)	3.82 (3.09)	3.79 (3.02)	3.7 (3.04)	F(2,2521)=6.85, p < .001

Table 3. Descriptive statistics for PTSD items from the International Trauma Questionnaire.

PTSD symptoms	Ghana Mean (SD)	Kenya Mean (SD)	Nigeria Mean (SD)	Total sample Mean (SD)	Prevalence (%)
Upsetting Dreams	1.13 (1.24)	1.35 (1.28)	1.25 (1.26)	1.27 (1.27)	38.2%
Reliving event in the here and now	1.46 (1.38)	1.62 (1.39)	1.64 (1.36)	1.59 (1.36)	47.9%
Internal reminders	1.72 (1.37)	2.03 (1.37)	1.92 (1.37)	1.93 (1.43)	59.0%
External reminders	1.74 (1.40)	2.02 (1.42)	1.99 (1.43)	1.95 (.04)	58.4%
Being on guard	2.66 (1.42)	2.66 (1.42)	2.80 (1.34)	2.72 (1.39)	87.7%
Jumpy/Startled	1.41 (1.33)	1.60 (1.23)	1.60 (1.33)	1.56 (1.32)	47.9%
					ANOVA
Total	10.10(6.31)	11.29(6.16)	11.21(6.05)	11.02(6.16)	F(2, 2521) =6.96, p < .001
Cronbach's α	.865	.848	.842	.845	

Note. Individual items score range 0-4; The total range is 0-24;

Table 4. Descriptive statistics for DSO items from the International Trauma Questionnaire.

DSO symptoms	Ghana Mean (SD)	Kenya Mean (SD)	Nigeria Mean (SD)	Total sample Mean (SD)	Endorsement (%)
Long time to calm down	1.51 (1.17)	1.70 (1.21)	1.50 (1.17)	1.58 (1.19)	48.8%
Numb	1.44 (1.31)	1.62 (1.35)	1.40 (1.29)	1.50 (1.32)	44.1%
Failure	1.12 (1.34)	1.44 (1.44)	1.01 (1.29)	1.20 (1.37)	34.2%
Worthless	0.86 (1.26)	1.17 (1.41)	0.74 (1.17)	0.93 (1.30)	26.1%
Feel cut-off from others	1.38 (1.33)	1.67 (1.45)	1.41 (1.36)	1.51 (1.40)	43.0%
Difficulty staying close to others	1.44 (1.34)	1.74 (1.44)	1.39 (1.34)	1.54 (1.39)	44.0%
Total	7.76 (6.12)	9.35 (6.65)	7.45 (6.07)	8.26 (6.38)	ANOVA F(2,2521)=24.98, p < .001
Cronbach's α	.879	.888	.884	.886	

Note. Individual items score range 0-4; The total range is 0-24;

Table 5. Fit statistics for the confirmatory factor models of the International Trauma Questionnaire.

Country	Model	Chi ² (df)	CFI	TLI	RMSEA (90% CI)	SRMR	BIC
Nigeria							
	Correlated	112.991 (39)	0.983	0.971	0.046 (0.036 0.056)	0.027	31921.025
	2 factor 2 nd order	145.654 (47)	0.977	0.968	0.048 (0.039 0.057)	0.034	31902.827
	Single Factor 2 nd order	442.120 (48)	0.909	0.875	0.095 (0.087 0.103)	0.077	32234.396
	Unidimensional	1418.319 (54)	0.686	0.616	0.167 (0.159 0.174)	0.105	33349.025
Ghana							
	Correlated	50.332 (39)	0.994	0.991	0.026 (0.000 0.045)	0.020	15128.819
	2 factor 2 nd order	69.022 (47)	0.989	0.985	0.033 (0.014 0.049)	0.034	15102.150
	Single Factor 2 nd order	288.021 (48)	0.883	0.840	0.108 (0.096 0.121)	0.092	15339.598
	Unidimensional	864.575 (54)	0.606	0.519	0.188 (0.177 0.199)	0.122	15990.158
Kenya							
	Correlated	109.554 (39)	0.984	0.972	0.045 (0.035 0.055)	0.025	32050.147
	2 factor 2 nd order	145.816 (47)	0.977	0.968	0.049 (0.040 0.058)	0.033	32037.044
	Single Factor 2 nd order	477.257 (48)	0.901	0.863	0.100 (0.092 0.108)	0.086	32405.683
	Unidimensional	1456.015 (54)	0.675	0.603	0.171 (0.163 0.178)	0.117	33523.078

Table 6. Standardized factor loadings for the Two-Factor Second Order model

	Re	Av	Th	AD	NSC	DR	PTSD	DSO
Having upsetting dreams that replay part of the experience or are clearly related to the experience?	0.726							
Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now	0.832							
Avoiding internal reminders of the experience (for example, thoughts, feelings, or physical sensations)?		0.832						
Avoiding external reminders of the experience (for example, people, places, conversations, objects, activities, or situations)?		0.770						
Being "super-alert", watchful, or on guard?			0.627					
Feeling jumpy or easily startled?			0.759					
When I am upset, it takes me a long time to calm down.				0.612				
I feel numb or emotionally shut down.				0.840				
I feel like a failure.					0.932			
I feel worthless.					0.906			
I feel distant or cut off from people.						0.880		
I find it hard to stay emotionally close to people.						0.790		
Second order loadings								

Re-experiencing	0.832	
Avoidance	0.840	
Sense of threat	0.914	
Affective dysregulation		0.889
Negative self-concept		0.823
Disturbed Relationships		0.935

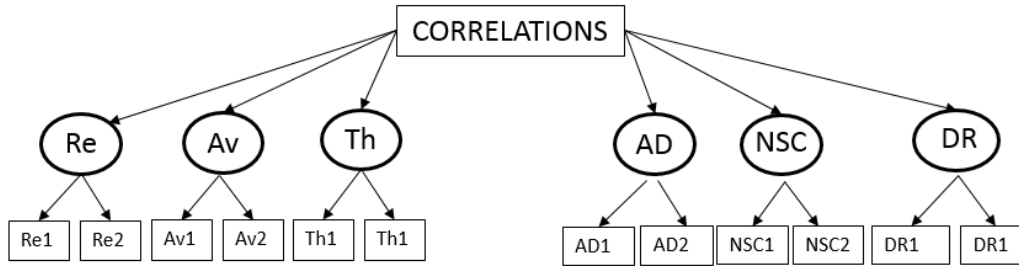
Note. All factor loadings and factor correlations are statistically significant ($p < .01$).

Table 7. Standardised regression coefficients for predictors of PTSD and DSO.

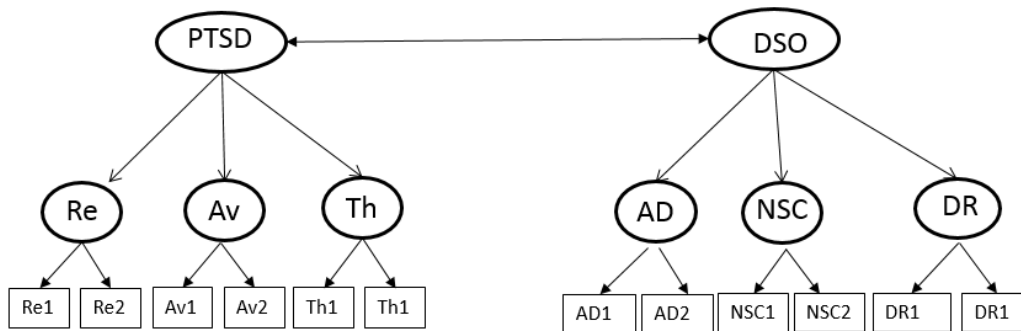
Item	PTSD	DSO
Sex (Female)	.082**	.099**
Age	-.157**	-.076**
Ghana	-.067**	.022
Kenya	-.001	.133**
Married	.065**	-.039
Full-time employment	.044	-.014
University education	.001	-.034
Living in an urban area	.025	.012
Natural disaster	.066 **	-.029
Fire or explosion	.013	.009
Transportation accident	.035	-.033
Serious accident at work, home, or during recreational activity	.080 **	.074**
Exposure to toxic substance	.033	.007
Physical assault	.168 **	.123**
Assault with a weapon	.081 **	.042
Sexual assault	.100 **	.086**
Other unwanted or uncomfortable sexual experience	.082 **	.131**
Combat or exposure to a war-zone	.033	-.008
Captivity	-.035	-.053*
Life-threatening illness or injury	.058 **	.059**
Severe human suffering	.140 **	.131**
Sudden, violent death	-.008	.019
Sudden, unexpected death of someone close to you	.076 **	.046
Serious injury, harm or death you caused to someone else	-.008	.009
R-squared	.244**	.192**
LEC TOTAL	.405 **	.287**
R-squared	.214**	.148**

Figure 1. Alternative factor models of the International trauma Questionnaire.

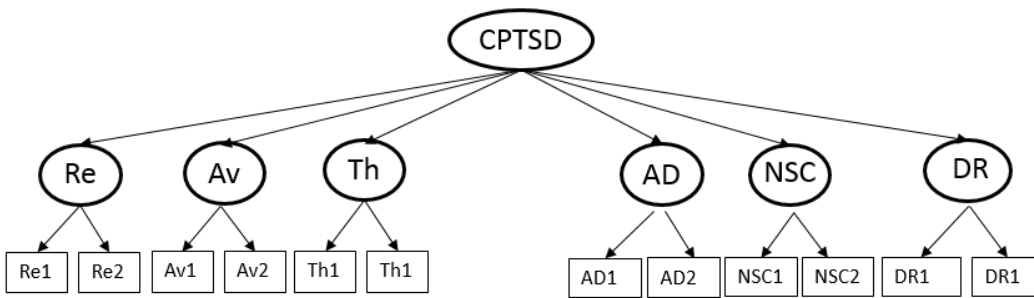
Model 1. First order correlated model



Model 2. 2-factor second-order correlated model



Model 3. 1-factor second-order model



Model 4. 1-factor first-order model

