

## Trauma in cultural contexts: Translating impact of event scale-revised

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### Abstract

The present study evaluates the back translation in Urdu and factor structure of Impact of Event Scale-Revised. The scale was administered to 446 adolescents in Pakistan with modifications to the time frame. Indirect traumatic exposure had occurred over six months to 2 years ago. Cronbach alpha coefficients of .78 for Intrusion subscale, .74 for Avoidance subscale and .66 for Hyperarousal subscales; and .88 for total scale scores are reported. Principal component analysis revealed a 3-factor solution explaining 45 % of the variance; factor structure was not similar to the proposed theoretical structure of IES-R. Endemic characteristics and cultural setup of the country highlight need to understand development and expression of trauma in the cultural milieu and direct future research for intervention strategies in schools.

Keywords: Indirect exposure, trauma, adolescents, factor structure.

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## 1. Introduction

Destructive acts of unprecedented violence on civilian population have severely disrupted the way of life in Pakistan. For more than a decade terrorist attacks at government installations as well as public places have taken place with no respect for gender or age. Kidnapping for ransom is rampant (Society for the Protection of the Rights of the Child, 2011) and exponential rise in Posttraumatic Stress Disorder (PTSD) among women and children has been noted (Human Rights Commission for South Asia, 2011). Adolescents are at high risk for direct and indirect exposure to violence particularly because more than 40% of the population is under 14 years of age (Pakistan Economic Survey, 2013-14) and the world's largest youth bulge country. At the same time no figures are available to assess the impact, prevalence or type of exposure adolescents face at this vulnerable stage of identity development. The present study is part of doctoral work where it was hypothesized that adolescents who are indirectly exposed to a traumatic event will develop vicarious trauma. Scores at moderate level on the IES-R were considered to indicate the presence of PTSD symptoms, particularly as the scale contains statements based on hyper arousal, intrusion and avoidance criteria of PTSD (Yazdani & Shafi, 2014). Adolescents reported the presence of symptoms six months to two years after indirect exposure to a traumatic event. Individuals' reaction to traumatic exposure is spread over a wide range of psychological and behavioral responses; at one extreme there may be no response and at the other, may lead to psychological disorders. Unmanaged traumatic exposure may cause 22% of those exposed to be symptomatic 6-12 months after the event (Asfour & Ramadan, 2011). Vicarious trauma occurs when an event is perceived as a threat to personal safety and one develops feelings of intense fear, hopelessness or horror. For the present study, vicarious traumatization is said to have occurred when one is subjected to explicit knowledge of a seriously distressing or tragic event as and a consequence, moderate symptoms of PTSD have developed (Lerias & Byrne, 2003).

The IES-R was developed by Weiss and Marmar (1997). It is a self-report, non-diagnostic measure based on the PTSD criteria of DSM-IV-TR. An earlier version was the 15-item IES which had been developed before DSM-III and was tapping only two of the four criteria for PTSD: intrusion and avoidance. The IES-R contains an additional 7 items and taps symptoms of Hyperarousal which is the fourth criterion for PTSD according to DSM-IV-TR. The IES-R scale is a measure that is used worldwide and has been translated into almost 20 languages. Originally designed and validated to be administered seven days after a specific event, the scale has also been widely used in different time frames. Its translations into languages such as French, Korean, Japanese and Swedish have measured trauma symptoms six months to one year or more after the event as well use of cutoffs, instead of mean scores and have reported good psychometric properties (Asukai et al., 2002; Brunet, St-Hilaire, Jehel, & King, 2003; Lim HK et al., 2009; Sveen et al., 2010). According to Gargurevich, Luyten, Fils, and Corveleyn (2009), few studies have explored the structural factor of the IES-R and examined it for relevance to the culture it was being used in. Closer at home, mental health problems in emergency responders in Pakistan were explored using an Urdu translated version of the IES-R, but psychometric properties of the scale outside the research have not been established. At the same time, authors found evidence regarding role of earlier traumas, dissociation and trauma-related rumination; as well as clinically significant levels of PTSD symptoms, heightened levels of anxiety, depression and/or somatic symptoms in an older sample (Ehring, Razik & Emmelkamp, 2011; Razik, Ehring & Emmelkamp, 2013). A need to investigate relationships between indigenous constructs and universal ones is being increasingly felt. Constructs' relevance varies in different cultures and this plays a vital role in developing, shaping and maintaining responses, beliefs, and personalities (Naz, Saleem & Mehmood, 2010). While patterns of human behavior in response to trauma are universal to the world, the culturespecific responses are demanded with regard to healing, treatment, intervention, and counseling (Wilson, 2007).

The onset of PTSD after direct exposure is well established empirically and further refined in the DSM 5 criterion (APA, 2013). Traumatic event exposure, like serious road accidents, violent personal assault or a terrorist attack inevitably leads to psychological complications. It is very likely that complications which involve anxiety-related disorders and post-traumatic stress persist long after the original trauma has occurred. They may resurface in response to another stressful situation or after a delay of days to weeks, or even months. An unexplored area is the indirect exposure of Pakistani adolescent trauma

caused by terrorist attacks occurring at numerous places in the country by either visiting the places of attack, learning about the kidnapping of individuals known to them, or receiving information about the death and details of a person or persons (Yazdani & Shafi, 2014). They are also exposed to violence through graphic footage and images in the electronic and printed media (Niaz, 2011). The present study explored presence of moderate trauma symptoms after indirect exposure to the traumatic event six months to two years after indirect exposure in adolescents (Yazdani, Zadeh & Shafi, 2015). Asfour and Ramadan (2011) attribute prevalence and rates of PTSD symptoms prevalence in younger nursing student to a lack of experience of dealing with stressful situations in emergency clinical settings. Eckardt (2008) suggested that greater exposure to precipitating situations is leading to the higher prevalence of PTSD in younger ages. There is a need to understand the development of vicarious trauma in general public, and specifically, in adolescents and children.

Urdu is the national language of Pakistan and belongs to the Indo-Aryan family. It developed under the influence of Persian, Turkish, Arabic and regional languages of the sub-continent. Today, it is the 20<sup>th</sup> most populous natively spoken language. Spoken in different states of India and across Africa and Europe, more than 2000 million people can speak and understand the language (Urdu—National Language of Pakistan, n.d.). Pakistanis are bilingual, in that they speak a regional language as well as a national language Urdu. English is the official language yet many are unable to read and understand the nuances of the English language. According to Ahmer, Faruqi and Aijaz (2007), due to a paucity of validated questionnaires culturally relevant measures assessing psychiatric symptoms in Urdu are needed so that they can be understood by the majority of the people. In the absence of such questionnaires, either new ones can be developed in Urdu, or translation and adaptation of an already established questionnaire from English can be carried out. As a consequence, little is known about the response of the general Pakistani population to a western mental health screening instrument and comparability becomes problematic (Syed et.al, 2008).

## **2. Method**

### *2.1 Subjects*

Adolescents between the ages of 14-17 were selected for the study. Purposive sampling technique was used to select several schools from those areas of Karachi where direct incidents of violence had not been reported. The total sample comprised of 456 students from classe 8-1<sup>st</sup> year, with 215 girls (47 %) and 241 (53%) boys belonging to a cross-section of all the socioeconomic classes with a mean age of 14.9 years ( $SD = .94$ ).

Permission letter from the researcher's University was presented to school administrators and permission was obtained to approach students in regular classroom hours. In the classroom, students' consent was obtained for their voluntary participation. A standard set of instructions were given about confidentiality. After collecting the data, subjects were debriefed. The IES-R evaluates distress caused by a specific stressful life event. In the present study, participants were asked to think of a traumatic event experienced in the recent past that may still be causing symptoms of distress. In case several stressful life events had been experienced, participants were to rate the most stressful one. Ethical considerations were kept into consideration; standard debriefing was given after collection of questionnaires, and contact numbers given in case there was need for further contact from students.. Workshops were conducted with teachers, students and further support were given four weeks after data collection.

## 2.2 Measures

Data collected for this study was part of doctoral research work investigating vicarious trauma in adolescents who had been indirectly exposed to violent, traumatic events and may have been experiencing a moderate level of symptoms on the IES-R.

### 2.2.1 Events Exposure Questionnaire

A questionnaire was designed by the researcher to obtain demographic information of participants as well as their exposure to traumatic events. The questionnaire consisted of 9 items, which explored exposure to direct and indirect exposure to violent events through questions such as, whether the adolescents knew anyone who had been a victim of bombing or kidnapping; as well as exposure to various media as sources of information and seeing sites after bomb blasts. Subjects, who experienced the traumatic event directly, were excluded from analysis.

### 2.2.2 The Impact of Event Scale-Revised

The IES-R is a Likert-type self-report scale with 22 items divided into three sub-scales and responses ranging from never (0) to very much (4). The total scale score is the sum of the 3 clinical scales. Although meant to be used within seven days of exposure to a traumatic event, the IES-R was administered in the present study to adolescents who had been vicariously exposed to an event having occurred in recent past to as a couple of years ago. Mean scores as recommended by the authors of the scale were used to calculate the score of respondents. Vicarious trauma was calculated by dividing individual scores around the mean into categories of low, moderate and high. Respondents reporting moderate means were placed in a vicariously traumatized group. The English version of IES-R has words referring to PTSD symptoms which may not be easily understood by adolescents for whom it is a second language, such as 'numb', 'jumpy', 'startle', 'on-guard'. Therefore the scale was back-translated into Urdu language, following the required core steps. Three psychologists, other than the researcher, translated the original English scale into Urdu, taking care to convey the meaning peculiar to English phrases used in the scale. In the next step, a bilingual expert back-translated the scale into English. The researcher then compared the IES-R-U with the original version and minor changes regarding tense or sentence structures were made. A pilot study was carried out on a sample of ten randomly selected students. This was done to improve scale administration and bring about modifications where an understanding of words or items was not clear.

## 3. Results

Statistical Package for the Social Sciences (SPSS) version 21 was utilized to enter data and analyze findings. Psychometric properties of the IES-R-U were explored; frequencies and percentages for categorical variables were calculated; means and standard deviations were calculated for continuous variables. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .88 and Bartlett's Test of Sphericity value of  $\chi^2 = 2141.023$ ,  $p < .000$  indicates that the variables are related and structure detection may be useful in conducting factor analysis in order to explore the factor structure of IES-R-U and maximize interpretability of factors (Naz, Saleem & Mehmood, 2010).

### 3.1 Factor Analysis

The construct validity was examined by means of Principal Component Analysis (PCA) using varimax rotation. A rotated component matrix using Kaiser-Guttman's retention of Eigen values greater than one supported a three-factor solution for the IES-R-U items explaining 45 % of the variability. The percentage of variance extracted values indicates that these three factors explain 18%, 14%, and 13% of the variance respectively. In all 45% of the variance is explained. In addition to the theoretical support for accepting it, the Eigen values after three factors yielded an insufficient number of primary loadings, and leading to difficulty of interpreting subsequent factors. Table 1 presents the rotated component matrix that describes the factor loadings of extracted factors with principal components highlighted.

#### 3.1.1 Reliability

Internal consistency of the IES-R-U was estimated by using Cronbach Alpha Coefficient. The item's total correlation scores were medium to high ( $p < .01$ ). All items correlate significantly with each other, with values ranging from .32 to .61. Table 2 presents full-scale Alpha internal consistency reliability estimate which was considerably high i.e., .88 indicating that the degree of homogeneity among the items is consistent with the degree of homogeneity theoretically expected for the construct of PTSD. In the next step, the internal consistency of the four subscales was estimated and high alphas were found for all the four sub-scales: Intrusion (.789), Avoidance subscales (.742) were high. The Hyperarousal subscale was relatively lower (.662).

Table 1. Rotated Component Matrix and Factor Loadings on Principal Extracted Components

IES-R Items	Components		
	Intrusion/ Hyperarousal	Hyperarousal/ Intrusion	Avoidance
9. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	<b>.74</b>		
4. I felt irritable and angry	<b>.64</b>		
14. I found myself acting or feeling like I was back at that time	<b>.60</b>	.31	
13. My feelings about it were kind of numb	<b>.56</b>	.21	.15
15. I had trouble falling asleep	<b>.55</b>	.44	.10
1. I had trouble staying asleep.	<b>.52</b>	.39	.21
6. I thought about it when I didn't mean to	<b>.50</b>	.41	
18. I had trouble concentrating	<b>.50</b>	.25	.23
2. Any reminder brought back feelings about it.	<b>.50</b>	.37	
3. Other things kept making me think about it	<b>.47</b>	.34	.17
20. I had dreams about it	<b>.43</b>	.21	.19
7. I felt as if it hadn't happened or it wasn't real	<b>.33</b>	.24	.27
9. Pictures about it popped into my mind	.20	<b>.68</b>	.13
16. I had waves of strong feelings about it	.28	<b>.67</b>	.11
10. I was jumpy and easily startled	.17	<b>.62</b>	
12. I was aware that I had a lot of feelings about it but I didn't deal with them	.11	<b>.49</b>	.27
21. I felt watchful and on-guard	.15	<b>.41</b>	.37
17. I tried to remove it from my memory	.11	.15	<b>.72</b>

11.I tried not to think about it	.15		<b>.72</b>
22. I tried not to talk about it.		.20	<b>.68</b>
5. I avoided letting myself get upset when I thought about it or was reminded of it.		.17	<b>.65</b>
8.I stayed away from reminders of it	.31	-.26	<b>.65</b>
Eigen values	6.425	2.118	1.262
% of variance	17.584	13.689	13.292
Cumulative variance	17.584	31.273	44.565

Table 2. Mean scores, standard deviations (SD) and alphas for IES-R-U

Scale name	Cronbach's Alpha	Mean	Variance	Std. Deviation	No of Items
Intrusion subscale	.789	11.00	39.388	6.276	8
Avoidance Subscale	.742	13.12	38.672	6.219	8
Hyperarousal Subscale	.662	7.99	21.635	4.651	6
IES-R Total	.880	32.26	222.733	14.924	22

#### 4. Discussion

The present study was carried out to translate the IES-R into Urdu and examine the factor structure and psychometric properties for sensitivity to cultural differences. Cronbach's alpha coefficients for the total scale (.88) were high. Intrusion subscale coefficients (.78), Avoidance subscales (.74) with a sufficient Hyperarousal subscale coefficient (.66) indicate the high internal consistency of IES-R-U. While the scale has its usefulness in the assessment of traumatic stress responses; the criterion validity of the Hyperarousal subscale regarding psycho-physiological measurements is arguable. Similar findings are reported by Baumert, Simon, Gundel, Schmitt, and Ladwig (2004) and this indicates a need to further explore symptoms of Hyperarousal. An exploratory factor analysis in the present study found 12 items of IES-R-U in the first factor; six were from Intrusion, four from Hyperarousal and one from the Avoidance subscale. This first factor has been titled Intrusion/Hyperarousal to indicate a predominance of items from the Intrusion subscale. In the second factor there are two items each from Hyperarousal and Intrusion subscales and one from Avoidance subscale; hence Hyperarousal/Intrusion. The third factor retains all except one item from Avoidance subscale, hence the original name is retained.

Keeping cultural sensitivities and relevance in view, the results of the new factor structure after factor analysis can be better understood. Item 9 from the Hyperarousal subscale ("Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart") focuses primarily on the physical factors. Item 4 ("I felt irritable and angry") also has external, outward expression and physical symptoms associated with it, hence it is second highest on the first-factor list. 'I had trouble falling asleep' (item 15) and "I had trouble concentrating" (item 18) are physiological reasons for adolescents rather than psychological. Two items 13 and 7 ("My feelings about it were kind of numb") ("I felt as if it hadn't happened or it wasn't real") from Avoidance subscale went over into the first and second factor, again because of the word feeling which is translated into a physical sensation.

Rampant terrorist and suicide bombing attacks in the country for more than a decade have targeted people irrespective of gender, ethnicity, religion or profession. While all segments of the population have been exposed to unimaginable scenes of death and destruction, this has been happening in a culture where issues related to mental health are stigmatic and a taboo. The lack of education, shortage of mental health professionals compounded by appropriate intervention services led to a steep rise in psychiatric disorders (Khalily, 2011). Adolescents between the age of 14 and 17 years cognitively process trauma and the experience is integrated into the context of life experiences. Symptoms are manifested very similar to adults, so much so, that the post-traumatic etiology of the disorder is masked (Cohen, Berliner & Mannarino, 2000). This developmental stage is furthermore characterized by concrete



thinking styles and they are focused on the present rather than the future. They may revert to concrete simplistic thinking under stress. When adolescents are surrounded by threats to their lives and that of loved ones, they are likely to develop negative, dysfunctional thinking, troubled behavior, and emotional responses. Consequently, their vulnerability increases to indirect exposure and they process trauma by transforming its effects into a physical rather than psychological state. They have difficulty expressing their feelings and thoughts of distress as compared to adults; school children are seldom assessed for emotional health until symptoms warranting professional attention (Naz & Siddiqui, 2010). Prevalence of moderate symptoms of PTSD due to indirect exposure to violence has been found in adolescents as well as females reporting higher levels of symptoms (Yazdani & Shafi, 2014). According to Farooqi, Tariq, and Burns (2010), Pakistani women tend to give a physical face to their psychological problems as somatic symptoms attract more attention and sympathy from others; probably due to the shame, embarrassment, stigma, and taboos attached to psychological problems and disorders. The authors found a higher level of physical symptoms of anxiety in women than male survivors of a bomb blast (Farooqi et al., 2010).

In the current study, total 45% variance was explained by the first three factors. The first factor explained 18% variance, the second 14% and the third explained 13%. Cultural differences in somatic representation of thought processes are yielding a factor structure of IES-R-U which is not supporting the original IES-R. Among one of the earliest studies, Weiss and Marmar (1997) found good internal consistency on all subscales as well as total scale over a period of six months and a single factor accounting for 49% of the variance. The authors explain the reason for a single factor to the fact that only a few subjects reached medium or high levels of symptoms. They concluded that the three symptom criteria of PTSD remains to be more carefully documented.

A review of earlier studies of IES-R indicates similar findings to the present study. Maercker (1998) in the German version of IES-R has reported a four-factor solution—Intrusion, Avoidance, Hyperarousal and Avoidance/Numbing factors. Asukai et al. (2004) reported a three-factor solution consisting of Intrusion/Hyperarousal, Avoidance and a mixed factor including Numbing, Sleep Disturbances, Irritability and Concentration items in two samples of disaster survivors. Brunet et al. (2003) examined trauma occurring in women after a natural disaster and extracted a two-factor (Avoidance and Intrusion/Arousal factors) or a three-factor solution (Hyperarousal, Avoidance, and Intrusion). Ba'guena et al. (2001) found a two-factor solution (Intrusion/Hyperarousal and Avoidance) for the Spanish version of the scale in 1,078 community young adults. Blom and Oberink (2012) reviewed the literature on PTSD in youth and found that the validity of the symptom criteria and clusters varies. The Avoidance/Numbing cluster outperformed the Re-experiencing-and Arousal cluster.

While the factor structure of the IES-R seems varied, (Gargurevich et al., 2009) the cross-cultural variability of PTSD in certain areas opens directions for further research. As the present findings indicate, this directs attention to the role of symptoms caused by trauma in developing symptomatology; the prevalence of somatic symptoms as well as interpreting those (Hinton & Lewis-Fernández, 2011). In another place, Norris et al., (2001) noted that the presence of PTSD symptoms is not taken seriously and is hence left unresolved by the individuals. Trauma is not understood in the cultural milieu as having a psychological aspect. Adolescents consider the symptoms as a physiological occurrence and focus on continuing with their lives as usual. They are unable to express themselves and the use of screening instruments such as these at educational institutions in any interview, provides a context and opportunity to screen and identify those at risk. It follows that emotional needs must be met as they may be very significant instead of just relying only on resilience (Khalily, Gul, Mushtaq, & Jehangir, 2012).

The IES-R and IES-R-U are measures easy to administer and to evaluate psychological stress. In the present paper, reliability coefficients have demonstrated soundness of the scale; however the issue of validity was not addressed. For future work validity issues need to be investigated and the indirect exposure to a threatening experience or event be also explored through addition to the IES-R. Cross-cultural variability in responses indicates the need to conduct further research. Individuals in countries

with scarce material and educational resources suffer because of cultural differences in the desirability of reporting psychiatric symptoms as well as treatment strategies.

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