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The Development and Validation of Media Exposure to Terrorism Scale: A Mixed-Method Approach

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Abstract: The purpose of the study is to develop an original, valid, and reliable measure of Media exposure to terrorism (METT) that could adequately measure the effects of METT on the mental health of adolescents exposed to the Army Public School Peshawar (APSP) terrorist attack through media. Previously available measures on METT have some limitations. The scale was developed using a mixed-method approach with a study sample of students aged 12 to 17 years, selected from seven cities across Pakistan. In Phase I, qualitative data acquired from Focus Group Discussions (FGDs) conducted with adolescents (N = 45), who had learned about the event through the media, were subjected to content analysis for item generation. Phase II was the tryout and validation of the developed scale. The developed scale was validated through exploratory factor analysis (N = 380), confirmatory factor analysis (N = 332), and tests of convergent validity, contrasted groups, and Cronbach's alpha. The final METT scale is unidimensional ($\lambda > 0.30$) with seven items having high item-total correlation (r = 0.63 - 0.77), good alpha reliability ($\alpha = 0.85$), and acceptable model fit (CFI = 0.99, RMSEA = 0.03). The developed scale can be used to assess the impacts of indirect exposure to terrorism and assist in informing policy and educational programs in the given context.
Keywords: Educational institutions, electronic media, scale development, ethnic consideration.

1. Introduction

Educational institutions in Pakistan have faced attacks for more than a decade. During 2009-2012, more than 838 schools were attacked by terrorists in Pakistan, as per the reports of the Global Coalition to Protect Education from Attack (2014). The Human Rights Commission of Pakistan has reported 505 terrorist attacks on schools in 2009 alone [1]. The Global Terrorism Database has also shared statistics revealing school attacks in Pakistan that were nearly 867 during 2009-2012, leaving 30 students killed and 97 injured [2]. Among these, the one with the most detrimental impact on the Pakistani nation was the attack on the Army Public School Peshawar (APSP). On 16 December 2014, terrorists attacked APSP with a mass casualty of 144, out of which the majority were children and adolescents [3]. The attack acquired immense attention from the social and electronic media, spreading fear, shock, and terror not only among direct victims but also among those who were indirectly exposed to the incident through the media [4]. Direct victims received immediate attention from health workers, but those who were indirectly exposed to the incidents were less regarded [5]. Terrorist attacks on educational institutions had adverse impacts on adolescents for multiple reasons.

Adolescents are the most sensitive and vulnerable age group in the context of exposure to terrorism. Firstly, because of lethal terrorist attacks and security threats to educational institutions of adolescents, who are soft targets for terrorists [6]. Secondly, because of the extensive media exposure to terrorism through social media and electronic media, it is hard for young minds to assimilate [7]. Thirdly, because of the disruption in their immediate environment –home and school- because of terrorist attacks on educational institutes, casting negative impacts on their mental health [8]. Also, adolescents' weak emotional coping skills, abstract thinking, and identity development phase make them more susceptible to developing psychological problems in the face of such traumatic events [9],[10]. Apart from all these vulnerabilities, a significant portion of Pakistan's

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population consists of adolescents (Yousuf, 2011), which further highlights the need to study the problems and issues our youth are facing in the shadow of terrorism.

Exposure to terrorism –whether direct or indirect- is a threat to the healthy development of adolescents and children. Direct exposure to a trauma implies first-order exposure to the traumatic stressor (i.e., experiencing or witnessing) [11]. In contrast, indirect exposure to trauma involves learning about unexpected or violent deaths, disasters, traumatic events, serious harm, or threats of death or injury through media, close friends, or family [12]. Direct exposure has always been in focus, but the concerns about the impact of indirect exposure to terrorism, mainly through the media, got much attention after the 9/11 terrorist attacks [12]. The 9/11 incident acquired immense attention from the media, spreading fear and trauma far and wide [13]. Studies revealed that without any direct exposure, extended media exposure to traumatic events predicted significant trauma-related symptoms, leading to poorer mental health [14]. Acute stress responses and poorer cardiovascular health have also been found to be significantly positively related to media exposure to terrorism [15]. Thus, it is evident from past literature that media exposure to terrorism is detrimental to the mental health of adolescents and children and requires attention.

Media exposure to terrorism has been significantly positively associated with PTSS in many foreign studies. The emergence of PTSS -intrusive memories and avoidance symptoms- has been well-documented in children and adolescents because of media exposure to terrorism [15],[16]. Surveys conducted after 9/11 revealed that children who have been exposed to media coverage of terrorist attacks for more than 3 hours have greater perceptions of personal risk, disrupted routine, and fear that has increased the risks for PTSS [13]. Another study, following the Oklahoma City Bombing, has revealed that there has been a significant positive relationship between television and emotional exposure to terrorist attacks and PTSS among adolescents and children [17]. About PTSS, a study has indicated that intrusion symptoms are observed regardless of the proximity to the epicenter of a terrorist attack, while avoidance symptoms were more prevalent in those who were directly exposed to a terrorist attack [18]. From past studies, it has been deduced that media exposure to terrorism plays a significant positive role in inducing PTSS in adolescents and children, irrespective of their geographical area.

2. Need for Scale Development

Keeping in view the primary objective of the study, which is to explore the impact of media exposure to terrorism on adolescents' mental health, a reliable and valid measure is required that could adequately address the issue in an Indigenous context. To the best of the researcher's knowledge, no such measure is available. Studies that have been previously conducted on the topic of the study have emphasized a specific incident such as 9/11 [19],[20]. Boston Marathon Bombing (Busso et al., 2014) and Oslo Bombing (Solberg et al., 2015), with which the targeted population could not relate much. These incidents acquired little or no attention from the electronic media of Pakistan; as a result, the targeted population had no knowledge or information of the incidents. Moreover, the measures used in these studies mainly addressed the issues that specific populations have faced in the aftermath of that incident. Thus, those measures were not applicable to the indigenous population. Most importantly, the studies on the impact of media exposure to terrorism have focused on events that have been extensively broadcast by local media. Indigenous populations often lack access to these channels or media sources. It has also been found that many of the studies have employed a checklist or a few general statements to probe the impact of media exposure to terrorism on the targeted population. Checklists used were specific to the culture in which the studies were conducted [21]. Thus, for the current study, these items were insufficient to cover the entire construction.

Therefore, it was decided to develop a measure that could efficiently measure the impact of media exposure to terrorism on adolescent mental health. To study the media exposure to terrorism, it was necessary to focus on a terrorist attack that had received immense coverage from the local media and that people could relate to [22]. In this regard, for the current study, media coverage of terrorist attacks on APSP was focused, as it has received extensive media coverage for quite a long time [23].

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3. Objectives

The primary objective of this study is to develop and validate a psychometrically robust scale to measure the impact of media exposure to terrorism among Pakistani adolescents, with a specific focus on the terrorist attack on the Army Public School, in Peshawar.

4. Method

4.1 Ethical Considerations

Keeping in view the sensitivity of the topic under scrutiny and the age group of the targeted population, ethical approval was sought from the ethical committee of the educational institute which is the Advanced Studies Research Board (ASRB). After getting approval researchers invited schools to take part in the study [24]. They were debriefed about the purpose of the study and the process of data collection. The measures to be used in data collection were shared with them and their queries were addressed.

Before reaching out to students' consent was taken from their parents and school authoritie[25],[26]. The consent form clearly states the purpose of the study and the process of data collection, ensuring that the information acquired will only be used for research purposes and that the participants' right to anonymity, withdrawal, and confidentiality will be respected throughout the research. Most importantly, the consent form assured that the well-being center at the National Institute of Psychology is on board if psychological support is required [27],[28]. The contact information of the researcher and the psychological support center was mentioned in the consent form.

4.2 Mixed-Methodology

To achieve the objectives of the study, a sequential mixed-method research design has been used, where the qualitative phase guides the quantitative phase (see Table 1). In Phase 1, which is qualitative in nature, FGDs were conducted until saturation was reached with the targeted population for item generation [29]. The qualitative data acquired from the FGDs were subjected to content analysis for item generation and item retention. Phase 2 of the study is the validation of the developed scale where quantitative data were collected through the survey method. Statistical packages have been used to analyze the quantitative data to establish the validity of the scale.

Table 1: Sequential Mixed Method for Scale Development.

Phase	Step	Description	Outcome
Phase 1: Qualitative	FGDs	Conduct FGDs with the targeted population until data saturation.	Insights and themes for item generation.
	Content Analysis	Analyze FGD data to generate initial items for the scale.	The initial pool of scale items.
	Committee Approach for Item Retention	A panel of experts reviews and refines the items based on relevance and clarity.	A finalized set of items for scale development.
Phase 2: Quantitative	Survey Data Collection	Administer the developed scale to a larger sample using surveys.	Quantitative data for validation.
	Statistical Analysis	Analyze data using statistical tools (e.g., reliability testing, factor analysis).	Validated scale with strong psychometric properties.

4.3 Convenient Sampling Technique

To select the sample of the study researcher employed a convenient sampling technique where participants who were at the proximal distance and easy to access were selected for study purposes [30]. This is a widely

used sampling technique in academic settings, assisting researchers in gathering the required data with minimal resources and time.

4.4 Process of Scale Development

4.4.1 Qualitative Phase: Item Generation Through Content Analysis of FGDs

Sample: The FGDs were conducted with a student population selected from various educational institutions in Rawalpindi and Abbottabad. The age of the participants ranged from 15 to 18 years. Participants were taken from both private and government sector educational institutes [31]. The sample included both male (24) and female (21) students with a level of education ranging from matriculation to intermediate. Based on the study's purpose, inclusion criteria were established, requiring all participants to be enrolled in specific educational institutions. Moreover, neither participants nor their immediate family members should be exposed to any terrorist incident directly [32].

It was also ensured that none of the participants had experienced any traumatic event in the past six months, to be certain that the main effect is due to the independent variable. Additionally, with the help of Parents, teachers, and school authorities, it was confirmed that the participants of the study were not going through any clinically significant mental health issues. In total, six FGDs were conducted (N=45).

Focus Group Guide: Based on the literature review, a focus group guide was developed to elicit participants' opinions and experiences. It contained questions mainly designed to explore their media exposure to terrorist attacks on APSP. Initially, the focus group guide consisted of 10 questions designed for conducting FGDs. Questions were open-ended and non-threatening [33].

It was assured that questions were not leading in nature. At the beginning of the guide, engagement questions were set to introduce participants to the topic of discussion and to make them comfortable with it for example, how many hours or minutes do you watch television or use Facebook per day? What do you know about terrorism? Secondly, exploration questions were set to get to the essence of the discussion, for example, what content have you been exposed to through television or Facebook regarding the terrorist attack on APSP? In the end, an Exit question was used to see if anything was missing in the discussion, for example, is there anything else you would like to say about the media exposure to terrorism or the content media shows? Probing questions were also generated under each question to get in-depth responses. After every FGD, the guide was revised [34].

New questions were added to the previous list of questions in the focus group guide because of new issues raised by the respondents regarding the research objectives, questions that did not bear interactive discussion or were repetitive in nature were excluded. By the end of the last focus group, there were 17 open-ended questions in the focus group guide [35].

5. Procedure

Each focus group consists of 5-13 participants selected through nomination where key individuals (institution staff) have nominated participants who they think make good participants and meet the inclusion criteria. Nominees were known for their ability to respectfully share their opinions and were willing to volunteer for about an hour. Efforts were made to achieve homogeneity (in the context of the setting, personal characteristics, and exposure to terrorism) between the groups to maximize disclosure among focus group participants. Once a group of viable participants had been established, they were told about the purpose and the total expected time which was 45 minutes.

Each one of them was then called to confirm their interest and availability [36],[37]. A series of FGDs were conducted till saturation was achieved. In total six FGDs were conducted. The focus group was conducted by a team consisting of a researcher, a moderator, and an assistant moderator. The moderator and the assistant moderator were MPhil scholars previously trained in notetaking during FGDs. The moderator mentioned the purpose of the study and set ground rules for discussion. Participants were assured about the anonymity and confidentiality of the responses and permission was sought to use an audio recorder to record their responses [38].

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5.1 Item Generation: Media exposure to terrorism

The primary purpose was to identify the type of media content the participants were exposed to in the aftermath of the terrorist attack on APSP, which turned out to be a national trauma and acquired immense attention from the media (Television and social media). Therefore, an item pool was generated with the objectives of the study in mind [39]. The FGDs conducted were subjected to thematic analysis employing an interpretative phenomenological approach. This reveals the major themes and codes reflecting the content that the participants were exposed to because of media exposure to the terrorist attack on APS Peshawar. Once the themes were established, item pools were generated from the relevant codes, transforming qualitative statements into survey items. Initially, 13 items were generated through content analysis that depicted the media exposure to terrorism in the context of the terrorist attack on APS Peshawar [40]. Participants mainly highlighted the scenes from the auditorium, injured individuals, the reaction of parents and guardians of children and adolescents who got martyred or injured, and some other sights of the APS Peshawar [41].

5.2 Committee approach

Initially, the pool of items, along with their frequency and percentage, was presented to a committee comprising three experts who had knowledge and understanding of the phenomenon under scrutiny and the methodology of scale development. All items were evaluated in terms of sensitivity, level of difficulty, considering the age of the targeted population, and relevance to the construction of interest. For item retention, it was decided that items with at least 50% reporting in FGDs would be retained in the initial form of the scale [42].

5.3 Initial Form of Media Exposure to Terrorism Scale

Considering the committee approach and the nature of the items, the initial form of the developed scale reflects the extent to which the targeted population has been exposed to images, explanations, videos, and other details regarding terrorist attacks provided through televised media outlets or Facebook. The initial version of the scale comprised 7 items; the remaining items were excluded due to their low reporting and sensitive nature. A four-point Likert scale, ranging from "never" (0) to "rarely" (1), "sometimes" (2), "often" (3), and "frequently" (4), was used to record the participants' responses [43]. Scoring high on the scale indicates higher exposure to media coverage of terrorist attacks on APSP. Low scores indicate that a person had less exposure to the media coverage of terrorist attacks on APSP.

Table 2 illustrates the most frequent images/content that participants reported while describing their media (Television /Facebook) exposure to terrorist attacks on APSP. All the items meet the retaining criteria that are above 50% reporting percentage. The highest frequencies correspond to the images of the auditorium where the incident occurred. Participants also reported that they had been exposed to more explicit images on Facebook, comparatively [44]. Whereas on Television there was extensive media coverage, but the content was not very explicit. Table 2 indicates the items included in the initial form of the scale.

Table 2: Items Retained for Media Exposure to Terrorism Scale (N= 45)

To what extent have you been exposed to the following images or scenes from APS, Peshawar terrorist attack through media platforms:	**f**	**%**
1. Blood on the floor of the auditorium	33	73
2. Chaotic image of auditorium/furniture	33	73
3. Destructed school building	32	71
4. Injured and martyred students	29	64
5. The victim's parents crying	28	62
6. Books/notebooks with stains of blood	24	53

7. Walls and windows riddled with bullets	24	53

5.4 Quantitative Phase: Try out of Developed Scale

After developing the measure, it was administered on a small sample of 50 as a try out. The objective of the tryout was to evaluate if the participants had been through any emotional difficulty in responding to any of the items on the questionnaire. Also, through an open-ended question, it was asked if they had been through any difficulty in comprehending or responding to the items.

For try-out, 50 students were selected from different educational institutes of Abbottabad, Rawalpindi, and Islamabad. The age range for the participants was between 15 and 17 years (M= 16.56; S.D= .73). Results revealed that participants remained emotionally stable while going through the questionnaires and they faced no difficulty regarding comprehension of the content of questionnaires [45]. The results of the tryout lead to the validation of the developed measure.

5.5 Validation of Developed Measure

Finally, validation and parsimony of the developed measures were established through different methods that are 1) inter-item correlation 2) exploration factor analysis (EFA) to establish factorial validity 3) Reliability through Cronbach's Alpha revealing the inter-consistency of the developed scales 4) Contrasted group validity 5) Convergent validity with measures of theoretically related constructs. The following section discusses in detail the process of scale validation.

5.6 Survey Administration: Gathering Enough Data Sample

Validation was carried out on a sample of 380 adolescents with an age range of 14 - 17 years (M= 15.35; S. D= 0.89) who were enrolled in certain educational institutes and had never been exposed to any act of terrorism, directly. A convenient sampling technique was used, and the sample was collected from three different regions of the country that are Khyber Pakhtoon Khwa, (Abbottabad and Peshawar), Federal (Islamabad and Rawalpindi), and Punjab (Lahore, Sialkot, and Kasur). The sample size is important in factor analysis. Comrey and Lee (2013) in their guide to sample sizes illustrated 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1000 or more as excellent sample size for factor analysis [44], [45]. Moreover, Everitt (1975) and Nunnally (1978) have recommended that for conducting EFA the sample size should be ten times greater than the variables under scrutiny. For factor analysis of METT, the sample size is 380 which indicates a good sample size for EFA about the criteria.

6. Procedure

Data was collected from various educational institutes of Punjab, Khyber-Pakhtunkhwa Khwa, and the Federal Region. Heads of the educational institutes were personally approached to seek permission for data collection. They were briefed about the study and a booklet comprising the questionnaires to be used in the study was shared with them [46]. The purpose of the study was discussed with heads and their queries were resolved if any. Furthermore, they were briefed about the time required to answer the questions in the booklet.

After being permitted by the heads of the educational institutes, informed consent was dually signed by the heads and the parents of the students who met the inclusion criteria of the study [47]. Students were selected from grade 8th to 2nd year and were assured about the confidentiality of their responses. The purpose of the study was to be briefed to the participants and booklets were distributed among them. Booklets were collected back after they were completed by the participants. In the end, participants and heads of educational institutes were thanked for their cooperation, time, and support. Once the data were collected the process of scale validation started with the Item reduction phase [48].

6.1 Item Reduction: Ensuring Scale is parsimonious Item-Total Correlation

Primarily, item-total correlation was carried out on the sample of the study (N=380) to examine the relationship of every item to the total score of the scale. Item-total correlation will assist in developing a parsimonious scale as items with low item-total correlation will be eliminated. A parsimonious scale increases the participant's ability to complete the survey questionnaire without suffering survey fatigue as it includes an optimal number of items [49]. Table 3 shows the item total correlation for Media exposure to terrorism scale.

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Table 3: Item-total Correlations of Initial Form of Media Exposure to Terrorism Scale (N=380)

Item no	R
1	.77**
2	.77**
3	.73**
4	.63**
5	.65**
6	.67**
7	.71**

**p < .01.

Results in Table 3 showed that all the items are highly correlated to the total score of the scale. Hence, with the optimal number of items, the next step was factorial validation through Exploratory factor analysis. (EFA).

6.2 Exploratory factor analysis for METT Scale

EFA was conducted on a sample of 380 to confirm the probable factor structure for the developed questionnaires. EFA examined the relationship between variables; the one-dimensionality of theoretical construct and construct validity. It was carried out using AMOS 21.

In EFA one of the main decisions is about the choice of rotation as it maximizes high item loadings and minimizes low item loadings, therefore, producing a more interpretable and simplified solution. Selection of the rotation depends upon the fact that items are related (Oblique) or not (Orthogonal). In this vein, the results of item-total correlation in Table 2 showed a significant correlation of items with total. Thus, as items are correlated, oblique (oblimin) rotation was selected for EFA using Principal Component Analysis (PCA).
Before the extraction of the factors, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were used to assess the suitability of the respondent data for factor analysis. The KMO index ranges from 0 to 1, with 0.50 considered suitable for factor analysis. Bartlett's Test of Sphericity should be significant ($p<.05$) for factor analysis to be suitable.

Results revealed that measures of sampling adequacy confirm the suitability of data for factor analysis, as the KMO is .84, which is within the acceptable range. Likewise, the significance ($p <.00$) of Bartlett's test of sphericity $\chi 2$ (336) = 852.72 indicated that the sample is adequate for EFA. Further factor loadings were calculated for each item which has been shown in Table 3, along with Eigenvalue, percentage of variance, and accumulative variance.

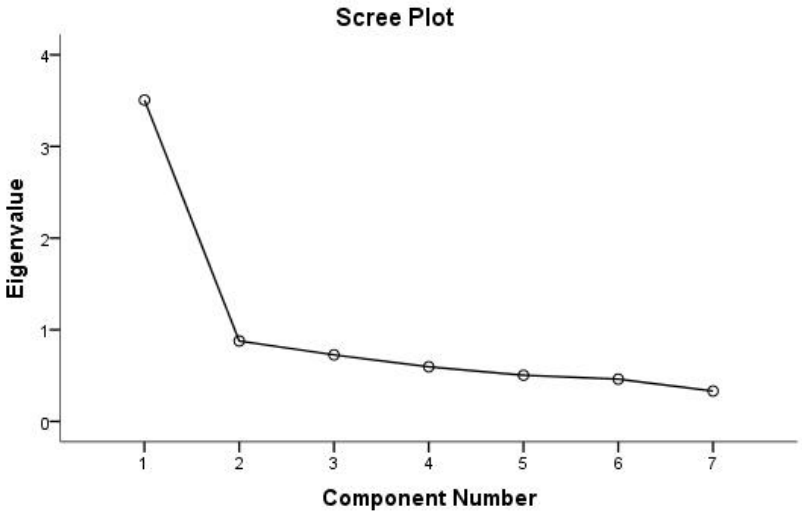

Figure 1: Scree plot Media exposure to terrorism scale.

The scree plot of METT in Figure 1 gave a clear indication of one dimension of the construct in the current context. The item loadings of the factors were highly correlated; therefore, items were analyzed by force for a one-factor solution, as the scree plot also suggested a one-factor solution. Based on the decision of the scree plot's point of influx, factor loadings, and percentage of variance explained, a single-factor solution was retained.

Table 4: Factor Loadings, Eigen Value, Percentage of Variance Explained, and Accumulative Variance Explained by One Factor Solution of Media Exposure to Terrorism Questionnaire Urdu Version (N=380).

	Items	**Factor Loadings**
	1	0.77
	2	0.78
	3	0.73
	4	0.63
	5	0.66
	6	0.67
	7	0.69
Eigen Value		3.50
Percentage of Variance Explained		50.08
Accumulative Percentage of Variance		50.08

In Table 4, the only factor so achieved explained an accumulated variance of 50.08 %. Along with this item, loading was in the acceptable range (>.30). Therefore, the Media Exposure to Terrorism Scale (MET) was taken as a unidimensional scale with 7 items measuring media exposure to terrorism in Pakistan.

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6.3 Confirmatory Factor Analysis (CFA) for METT Scale

CFA with maximum likelihood, was conducted on an independent sample of 332 individuals with the help AMOS 22 statistical package. The aim was to test whether the unidimensional model of METT could be replicated on an independent sample. Various indices were generated to test this model, as represented in Table 5:

Table 5: Confirmatory Factor Analysis (Indices of Model Fit) for Media Exposure to Terrorism Scale (N = 332)
Note. χ^2(pdf) = chi-square; χ^2/df = normed chi-square; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index; RMSEA = Root Mean Squared Error of Approximation.

Indices	$\chi^2(pdf)$	χ^2/df	GFI	NFI	CFI	IF	RMSEA
M 1	49.21(14)	3.15	0.96	0.90	0.93	0.93	0.08
M 2	15.82(12)	1.32	0.98	0.97	0.99	0.99	0.03

M1 = Default Model; M2; After adding error covariance.

The Model 1 of present study (default model) shows that most of the indices of model fit were in acceptable range except χ^2/df, NFI, and RMSEA as per conventions which state that for a model to be considered acceptable, NFI should be greater than .90(Byrne, 1994), RMSEA value should be less than .08 (Browne & Cudeck, 1993) and χ^2/df value should be less than 2 or 3 [50].

Model 2 shows the improved model fit indices obtained after covarying error terms of certain items with the highest modification indices. Thus, covariances were drawn between the error terms of item 1 (Blood on the floor of the auditorium) and item 2 (Chaotic image of auditorium/furniture); as well as between item 1 and item 6 (books/notebooks with images of blood). In the case of item 1 and item 6, these correlations may be due to the mention of the word 'blood' in both. As Bollen & Lennox (1991) have suggested, items with similar wordings or items that occur next to each other in a scale can have correlated errors.

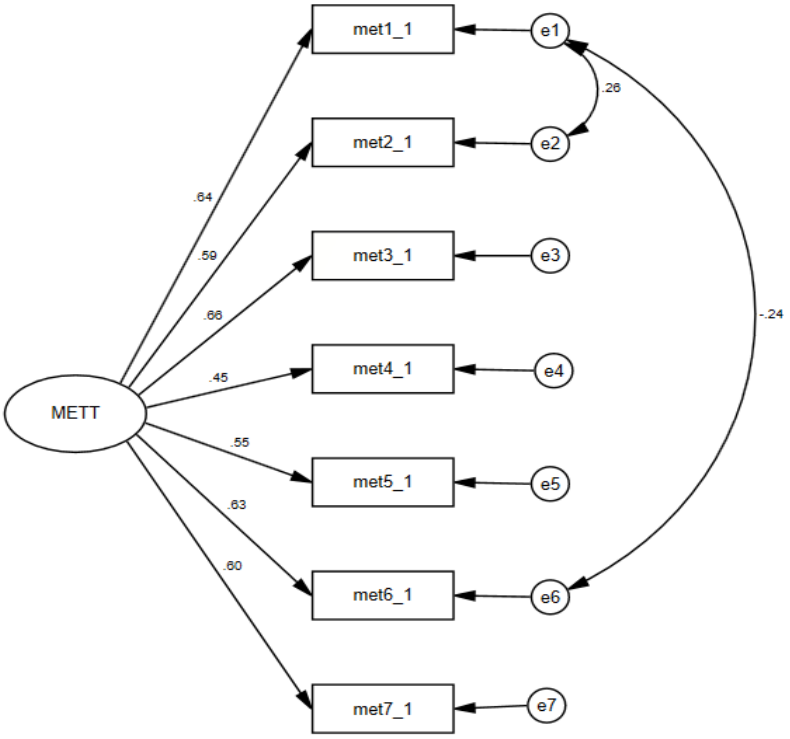

Figure 2: Measurement Model of Media Exposure to Terrorism Scale

Figure 2 represents the graphical picture of the unidimensional measurement model of METT. The covariances drawn between error terms are represented. It is evident from Figure 2 that all items possess factor loadings greater than .40 which is a convention set by [51]. Thus, the factor structure of METT, as proposed by EFA, has been confirmed through a CFA on an independent sample [52].

7. Reliability

Furthermore, the alpha reliability of the METT scale was also calculated. Results revealed that the final form of the developed scale, that is METT scale has a good level of alpha values (α = 0.83). After validating the development measures through factorial validity and establishing their internal consistency through item-total correlation and Cronbach's Alpha, the validity of the developed scale was further strengthened by contrasted groups and convergent validity.

7.1 Contrasted Groups

The construct validity of the developed METT scale has further been established through contrasted groups. It is evident from past studies that media exposure to terrorism impacts differently to male and female participants [53],[54]. Keeping in view this fact, the researcher has investigated the differences in METT scores for the male and female participants as they were expected to score differently when indirectly exposed to terrorism through media. Align with the past literature, there was a significant difference between the mean scores of males (M = 18.59, S.D = 6.06) and female participants (M=21.00, S. D=5.10) on the METT scale. Females scored significantly higher on in METT scale as compared to male participants as indicated in the following bar graph.

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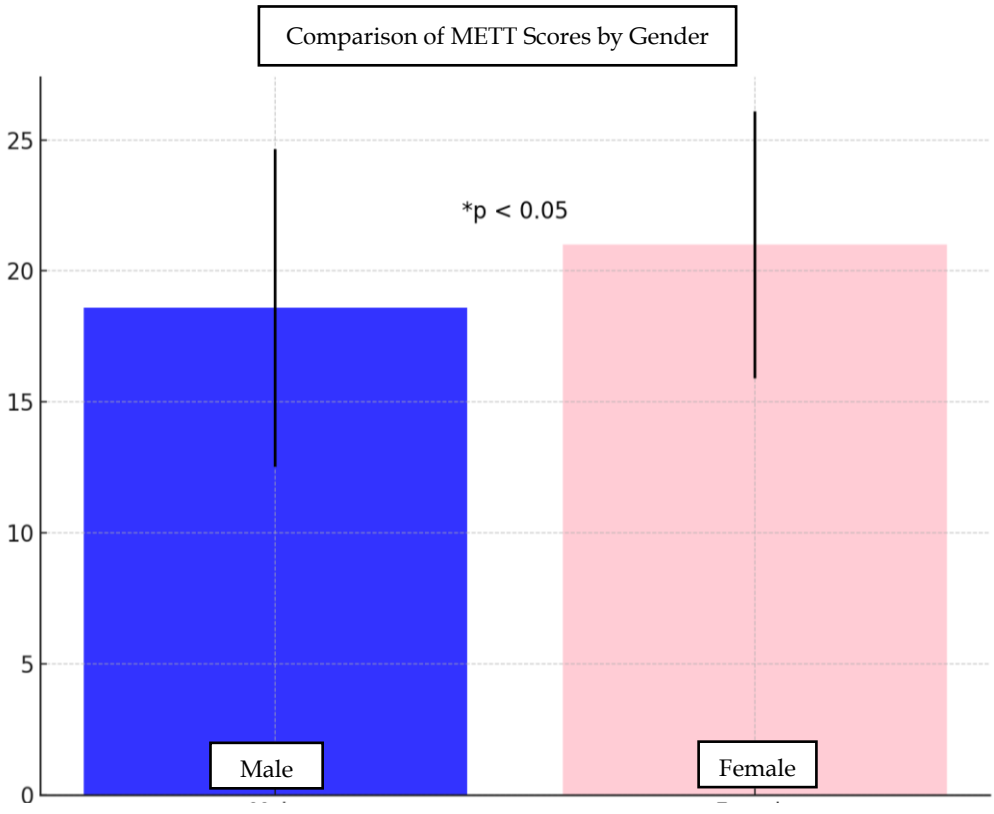

Figure 3: Comparing the METT scores of male and female

7.2 Convergent Validity

Additionally, the convergent validity of METT was established by estimating the correlation coefficient between METT and prosocial behavior and METT and Post-traumatic stress symptoms (PTSS). As indicated by the past literature, METT is significantly positively related to prosocial behavior and PTSS among the dole significantly scents [55]. To establish the convergent validity, the parochiality of adolescents has been measured by administering the Strength and Difficulties Questionnaire's subscale for prosocial behavior whereas PTSS were assessed through a short version of CRIES.

The results revealed that METT is significantly positively related to both the prosocial behavior of individuals ($r = .21^{**}$, $p = \leqslant .00$) and PTSS ($r = .24^{**}$, $p = \leqslant .00$) as evident from the Scatter plot 1. Based on the statistical analysis and scatter plot illustration, it can be stated that the developed measure is valid and reliable and serves the purpose well.

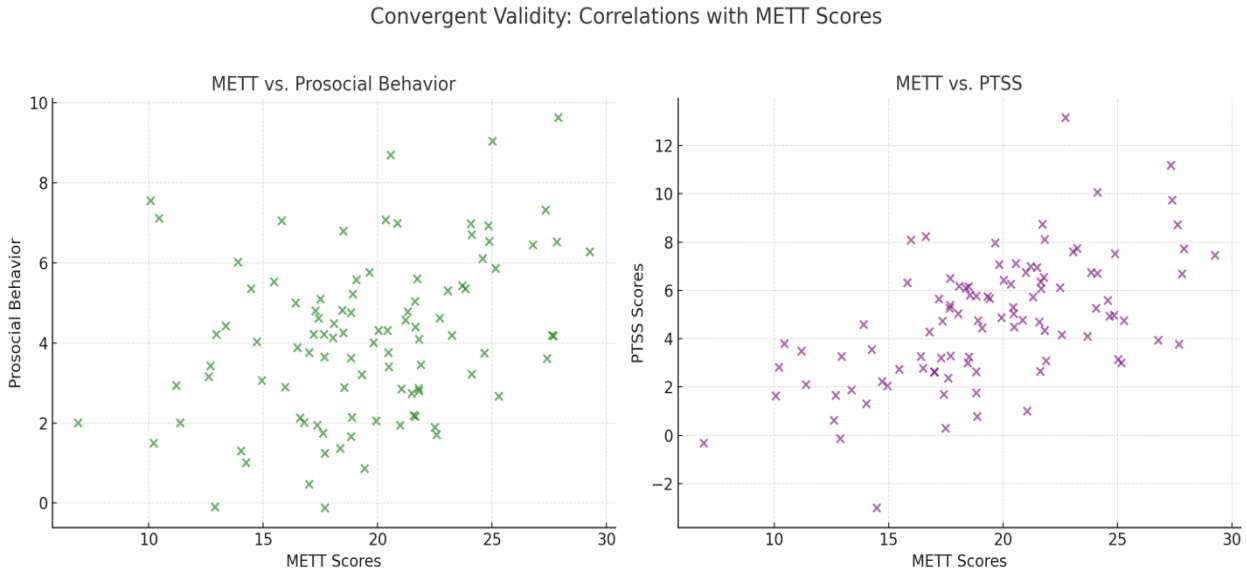

Figure 4: Illustrating the convergent validity of the METT scale

8. Discussion

The Media Exposure to Terrorism Scale was developed to overcome the shortcomings of prior measures, which were not appropriate or relevant for the study's target population. Earlier measures tended to focus on specific incidents, which made them less applicable to the participants of the current study [56],[57]. Furthermore, there was a lack of standardized tools to assess the effects of media exposure to terrorism, as existing instruments were mostly formatted as checklists designed for particular cultural settings in which the research took place [58]. To our knowledge, there was no established measure available to assess the effects of media exposure to terrorism on the mental health of adolescents within the Pakistani cultural framework. As a result, the decision was made to develop a scale that is both culturally relevant and comprehensive to effectively evaluate this impact.

The process of scale development involves a mixed-method research approach where items were generated from the content analysis of FGDs followed by a quantitative phase where developed items were tested and validated. Zhou, (2019) revealed that sequential mixed methods research design is the most suitable and reliable approach for scale development is the most. All the codes related to the media exposure to terrorism were carefully analyzed.

The pool of items was constructed from the related codes which were then subjected to a committed approach where a panel of experts carefully evaluated each item, keeping in view their relevance and appropriateness for the targeted population as guided by Luyt., (2012). Supporting the results, a study has revealed that the panel reviews for item generation validate the content of the instrument (Dragostinov et al., 2022). Based on the panel review and retaining criteria of items according to which items with response percentages above 50 % were retained, 7 items were selected for the Media exposure to terrorism scale.

EFA was conducted on a sample of 380 to establish the construct validity of the developed scale (Comrey & Lee.,1992). Furthermore, measures of sampling adequacy confirmed the suitability of the sample for EFA, as indicated by the KMO and Barletts test of sphericity. For the Media exposure to terrorism scale, oblique rotation was selected as inter inter-item correlation indicating that the items are correlated. Results revealed one one-factor solution for Media exposure to terrorism based on Eigenvalue> 1 and scree plot. Items on this scale were highly correlated indicating that the construct under scrutiny is homogenous in nature. The tentative factor structure revealed by the EFA was further confirmed by the CFA where all the model fit indices (CFI; IFI; GFI; NFI; RMSEA) were in an acceptable range. The Cronbach's alpha reliability value (α = 0.83) also confirms that the scale has good internal consistency.

The construct validity of the METT was further confirmed through a contrasted group where it was expected that males and females would score differently on media exposure to terrorism scale, considering the Indigenous context.

The results revealed that girls scored higher on METT as compared to boys. The results are supported by past studies such as Pfeffer Baum et al., (2018) and Stuber, Resnick, and Galea., (2006) indicating that females prefer to receive information about the disastrous incident via electronic media as compared to males. Moreover, in Pakistani culture females are comparatively less outgoing and mostly confined to their homes. Thus, they have a high potential to get exposed to media coverage about the terrorist attack on APS Peshawar, comparatively. This fact is further proved by exploring the moderating effect of gender on METT and intrusion symptoms.

Furthermore, establishing the convergent validity of the developed scale, the results of the study revealed that METT potentially induces PTSS among the targeted population. Empirically, it has been tested and confirmed in past studies that media exposure to terrorism is significantly positively related to PTSS in adolescents and children [58]. The studies conducted after the 9/11 terrorist attack, the Oslo Bombings, the Boston Marathon Bombing, and the Oklahoma school incident have revealed that indirect exposure to terrorism through media and close relatives has induced post-traumatic stress symptoms among adolescents and children [59].

The relationship between METT and prosocial behavior as an effect of media exposure to terrorist attacks on APS was also assessed to establish construct validity through convergent validity. There was a significant positive relationship between METT and the prosocial behavior of the participants. Literature supports the notion that indirect exposure to terrorism or any other trauma can potentially instigate and promote prosocial behavior in the targeted population [56].

Exposure to trauma or adversity instigates a sense of responsibility and commitment to help others rather than being hostile to others [59]. Indirect exposure to terrorism is significantly positively related to prosocial behavior because it assists in relieving one's suffering after a traumatic event. Moreover, prosocial behavior shifts one's attention from self to others and promotes self-efficiency and competency [60]. Thus, further confirming the construct validity of the METT. Overall, METT is found to be a valid and reliable scale to be used to measure the construction of interest.

9. Implications and Limitations

The scale can aid psychologists and researchers in determining the impact of media exposure to terrorism on the mental health of children and adolescents. This is crucial because frequent exposure to violent and upsetting material can exacerbate post-traumatic stress symptoms including anxiety and panic. Moreover, the results of the scale may offer insightful information to parents, educators, and politicians regarding the possible drawbacks of providing unrestricted access to violent or graphic content related to terrorism.

This knowledge can help establish rules for young audiences' media exposure to delicate subjects and regulate their consumption of age-appropriate content. This can assist in providing tailored therapies to individuals who are more likely to experience mental health problems because of recurrent indirect exposure to terrorism.

The sample size is not large enough to ensure the true representation of the targeted population. This has hampered the generalizability of the results of the study. Since the sample is not chosen at random, the inherent bias in convenience sampling and the chance of over-presentation or under-presentation of certain groups within the sample were present. Future studies are suggested to incorporate random sampling techniques to enhance the generalizability of the results and to reduce sample biases [61].

10. Conclusion

Conclusively, the Media Exposure to Terrorism scale is a valid and reliable measure that can be used to inform interventions, guide guidelines for media use, and advance our understanding of how media affects young minds in a society that is becoming increasingly interconnected. It has been found from the FGDs that children and adolescents have been exposed to heart-wrenching footage and images about terrorist attacks on APS Peshawar that could potentially affect their mental health. Therefore, there should be laws that regulate media broadcasting without compromising the media 's independence.

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Data availability
The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent
Not applicable. This study uses publicly available, de-identified secondary data and does not involve human participants or personal information.

Competing interests
The authors declare no competing interests.

References
[1] Ahern, J., Galea, S., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Television images and psychological symptoms after the September 11 terrorist attacks. Psychiatry: Interpersonal and Biological Processes, 65(4), 289–300.
[2] Asad Ali Shah, S., Yezhuang, T., Muhammad Shah, A., Khan Durrani, D., & Jamal Shah, S. (2018). Fear of terror and psychological well-being: The moderating role of emotional intelligence. International Journal of Environmental Research and Public Health, 15(11), 2554.*
[3] Becker-Blease, K. A., Finkelhor, D., & Turner, H. (2008). Media exposure predicts children's reactions to crime and terrorism. Journal of Trauma & Dissociation, 9(2), 225–248.*
[4] Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. Frontiers in Public Health, 6, 149.*
[5] Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin, 110(2), 305–314.*
[6] Brown, S. L., Brown, R. M., House, J. S., & Smith, D. M. (2008). Coping with spousal loss: Potential buffering effects of self-reported helping behavior. Personality and Social Psychology Bulletin, 34(6), 849–861.*
[7] Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 136–154). Sage Publications.
[8] Busso, D. S., McLaughlin, K. A., & Sheridan, M. A. (2014). Media exposure and the sympathetic nervous system reactivity predicts PTSD symptoms after the Boston Marathon bombings. Depression and Anxiety, 31(7), 551–558.*
[9] Butler, A. S., Panzer, A. M., & Goldfrank, L. R. (2003). Understanding the psychological consequences of traumatic events, disasters, and terrorism: Preparing for the psychological consequences of terrorism: A public health strategy.
[10] Byrne, B. M. (1994). Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming. Sage Publications.
[11] Comrey, A. L., & Lee, H. B. (2013). A first course in factor analysis. Psychology Press.
[12] Costa, N. M., Weems, C. F., & Pina, A. A. (2009). Hurricane Katrina and youth anxiety: The role of perceived attachment beliefs and parenting behaviors. Journal of Anxiety Disorders, 23, 935–941.*
[13] Dragostinov, Y., Harðardóttir, D., McKenna, P. E., Robb, D. A., Nesset, B., Ahmad, M. I., ... & Rajendran, G. (2022). Preliminary psychometric scale development using the mixed methods Delphi technique. Methods in Psychology, 7, 100103.*
[14] Durrani, A., Mahsood, N., Ali, I., Kibria, Z., & Imtiaz, A. (2017). Psycho-social impact of Army Public School terrorist attack on high school children in district Peshawar, Khyber Pakhtunkhwa, Pakistan. Khyber Medical University Journal, 9(3).*
[15] Eisenberg, N., & Silver, R. C. (2011). Growing up in the shadow of terrorism: Youth in America after 9/11. American Psychologist, 66(6), 468.*
[16] Everitt, B. S. (1975). Multivariate analysis: The need for data, and other problems. The British Journal of Psychiatry, 126(3), 237–240.*
[17] Field, A. (2014). Discovering statistics using IBM SPSS statistics. Sage.

[18] Frazier, P., Greer, C., Gabrielsen, S., Tennen, H., Park, C., & Tomich, P. (2013). The relation between trauma exposure and prosocial behavior. Psychological Trauma: Theory, Research, Practice, and Policy, 5(3), 286.*
[19] Garbarino, J., Governale, A., Henry, P., & Nesi, D. (2015). Children and terrorism and commentaries. Social Policy Report, 29(2), 1–39.*
[20] Garfin, D. R., Poulin, M. J., Blum, S., & Silver, R. C. (2018). Aftermath of terror: A nationwide longitudinal study of posttraumatic stress and worry across the decade following the September 11, 2001 terrorist attacks. Journal of Traumatic Stress, 31(1), 146–156.*
[21] Gillen, G. (2005). Positive consequences of surviving a stroke. American Journal of Occupational Therapy, 59(3), 346–350.*
[22] Global Coalition to Protect Education from Attack. (2014). Education under attack 2014 (pp. 1–260). Human Rights Watch. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/Education%20under%20attack_
[23] Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). Multivariate data analysis (5th ed.). Prentice Hall.*
[24] Henriksen, C. A., Bolton, J. M., & Sareen, J. (2010). The psychological impact of terrorist attacks: Examining a dose-response relationship between exposure to 9/11 and Axis I mental disorders. Depression and Anxiety, 27(11), 993–1000.*
[25] Holman, E. A., Garfin, D. R., & Silver, R. C. (2014). Media's role in broadcasting acute stress following the Boston Marathon bombings. Proceedings of the National Academy of Sciences, 111(1), 93–98.*
[26] Holman, E. A., Silver, R. C., Poulin, M., Andersen, J., Gil-Rivas, V., & McIntosh, D. N. (2008). Terrorism, acute stress, and cardiovascular health: A 3-year national study following the September 11th attacks. Archives of General Psychiatry, 65(1), 73–80.*
[27] Human Rights Watch. (2018). "Shall I feed my daughter, or educate her?" Barriers to girls' education in Pakistan (pp. 1–116). United States of America: Human Rights Watch. Retrieved from https://www.hrw.org/sites/default/files/report_pdf/pakistan1118_web2.pdf
[28] Israel-Cohen, Y., Kashy-Rosenbaum, G., & Kaplan, O. (2016). A study of subjective well-being, resilience, and risk of PTSD among Israeli adolescents exposed to terrorism. Social Inquiry into Well-Being (Archive), 2(2), 24–33.*
[29] Jenness, J. L., Jager-Hyman, S., Heleniak, C., Beck, A. T., Sheridan, M. A., & McLaughlin, K. A. (2016). Catastrophizing, rumination, and reappraisal prospectively predict adolescent PTSD symptom onset following a terrorist attack. Depression and Anxiety, 33(11), 1039–1047.*
[30] Keinan, G., Sadeh, A., & Rosen, S. (2003). Attitudes and reactions to media coverage of terrorist acts. Journal of Community Psychology, 31(2), 149–165.*
[31] Kennedy, C., Charlesworth, A., & Chen, J. L. (2004). Disaster at a distance: Impact of 9.11.01 televised news coverage of mothers' and children's health. Journal of Pediatric Nursing, 19(5), 329–339.*
[32] Khan, A., Ullah, O., & Nawaz, K. (2018). Post-traumatic stress disorder among school children of Army Public School Peshawar after six months of a terrorist attack. Pakistan Journal of Medical Sciences, 34(3), 525.*
[33] Kline, R. B. (1998). Principles and practice of structural equation modeling. Guilford Press.*
[34] Luyt, R. (2012). A framework for mixing methods in quantitative measurement development, validation, and revision: A case study. Journal of Mixed Methods Research, 6(4), 294–316.*
[35] McNeely, C., & Blanchard, J. (2009). The teen years explained: A guide to healthy adolescent development. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health.*
[36] Moscardino, U., Scrimin, S., Capello, F., & Altoè, G. (2014). Self-blame and PTSD symptoms in adolescents exposed to terrorism: Is school connectedness a mediator? Journal of Adolescence, 37(1), 47–52.*
[37] Mulye, T. P., Park, M. J., Nelson, C. D., Adams, S. H., Irwin Jr, C. E., & Brindis, C. D. (2009). Trends in adolescent and young adult health in the United States. Journal of Adolescent Health, 45(1), 8–24.*
[38] Nawaz, R., Nawaz, S., Rahman, S. U., & Khattak, M. H. (2017). Post-traumatic stress disorders among students after the Army Public School Peshawar attack in 2014. Journal of Medical Sciences, 25(4), 437–441.*
[39] Neal, A. G. (2018). National trauma and collective memory: Extraordinary events in the American experience. Routledge.*
[40] Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.*
[41] Park, M. J., Scott, J. T., Adams, S. H., Brindis, C. D., & Irwin Jr, C. E. (2014). Adolescent and young adult health in the United States in the past decade. Journal of Adolescent Health, 55(1), 3–16.*

[42] Pat-Horenczyk, R., Peled, O., Daie, A., Abramovitz, R., Brom, D., & Chemtob, C. M. (2007). Adolescent exposure to recurrent terrorism in Israel: Posttraumatic distress and functional impairment. American Journal of Orthopsychiatry, 77(1), 76–85.*
[43] Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. Annual Review of Psychology, 56, 365–392.*
[44] Pfefferbaum, B., Newman, E., Nelson, S. D., Nitiéma, P., Pfefferbaum, R. L., & Rahman, A. (2014). Disaster media coverage and psychological outcomes: Descriptive findings in the extant research. Current Psychiatry Reports, 16(9), 464.*
[45] Pfefferbaum, B., Nitiéma, P., Pfefferbaum, R. L., Houston, J. B., Tucker, P., Jeon-Slaughter, H., & North, C. S. (2016). Reactions of Oklahoma City bombing survivors to media coverage of the September 11, 2001, attacks. Comprehensive Psychiatry, 65, 70–78.*
[46] Pfefferbaum, B., Seale, T. W., McDonald, N. B., Brandt Jr, E. N., Rainwater, S. M., Maynard, B. T., ... & Miller, P. D. (2000). Posttraumatic stress two years after the Oklahoma City bombing in youths geographically distant from the explosion. Psychiatry, 63(4), 358–370.*
[47] Pfefferbaum, B., Tucker, P., Pfefferbaum, R. L., Nelson, S. D., Nitiéma, P., & Newman, E. (2018). Media effects in youth exposed to terrorist incidents: A historical perspective. Current Psychiatry Reports, 20(2), 1–8.*
[48] Qureshi, R., Gulraiz, A., & Shahzad, Z. (2016). An analysis of media's role: A case study of Army Public School (APS) Peshawar attack. Social Communication, 2(2), 20–30.*
[49] Rackham, L. A., & Lau-Zhu, A. (2021). Taxing working memory to modulate mental imagery of the 9/11 terrorist attacks following media exposure during childhood: A pilot study in young adult UK residents. Anxiety, Stress, & Coping, 1–14.
[50] Silver, R. C., Holman, E. A., Andersen, J. P., Poulin, M., McIntosh, D. N., & Gil-Rivas, V. (2013). Mental- and physical-health effects of acute exposure to media images of the September 11, 2001, attacks and the Iraq War. Psychological Science, 24(9), 1623–1634.*
[51] Solberg, Ø., Blix, I., & Heir, T. (2015). The aftermath of terrorism: Posttraumatic stress and functional impairment after the 2011 Oslo bombing. Frontiers in Psychology, 6, 1156.*
[52] Somer, E., Ruvio, A., Soref, E., & Sever, I. (2005). Terrorism, distress, and coping: High versus low impact regions and direct versus indirect civilian exposure. Anxiety, Stress, and Coping, 18(3), 165–182.*
[53] Staub, E. (2005). The roots of goodness: The fulfillment of basic human needs and the development of caring, helping and nonaggression. In Carlo, G., & Edwards, C. (Eds.), Moral motivation through the life span (pp. 33–72). University of Nebraska Press.*
[54] Steffen, S. L., & Fothergill, A. (2009). 9/11 volunteerism: A pathway to personal healing and community engagement. The Social Science Journal, 46(1), 29–).*
[55] Stuber, J., Resnick, H., & Galea, S. (2006). Gender disparities in posttraumatic stress disorder after mass trauma. Gender Medicine, 3, 54–67.*
[56] The Express Tribune. (2017). Militant attacks on schools causing devastating effects on Pakistani society: HRW. Retrieved March 1, 2021, from https://tribune.com.pk/story/1366893/militant-attacks-schools-causing-devastating-effects-pakistani-society-hrw
[57] US State Department (USSD). (2014). Country reports on terrorism 2013. Washington: US State Department.*
[58] Vollhardt, J. R. (2009). Altruism born of suffering and prosocial behavior following adverse life events: A review and conceptualization. Social Justice Research, 22(1), 53–97.*
[59] Yonah, H. (2019). Major life-changing events and prosocial behavior: Terrorism, mass shootings, natural disasters, immigration, and philanthropy. Doctoral Dissertation, The Hebrew University of Jerusalem.*
[60] Zhou, Y. (2019). A mixed methods model of scale development and validation analysis. Measurement: Interdisciplinary Research and Perspectives, 17(1), 38–47.*
[61] Zimering, R., Gulliver, S. B., Knight, J., Munroe, J., & Keane, T. M. (2006). Posttraumatic stress disorder in disaster relief workers following direct and indirect trauma exposure to Ground Zero. Journal of Traumatic Stress, 19(4), 553–557.