

## DEVELOPMENT OF TERRORISM IMPACT SCALE: INITIAL VALIDITY AND RELIABILITY ANALYSES

Farah Malik, Rabia Khawar, Rabia Iftikhar,  
Saima Saeed and Rehana Ilyas  
Department of Psychology  
GC University, Lahore, Pakistan

This study describes the development and psychometric properties of Terrorism Impact Scale (TIS). Items generated were based on two focus groups with journalists, personnel from security forces and experts from different walks of life, in-depth interviews conducted with religious scholars and a preliminary questionnaire administered to the survivors of terrorist attacks, witnesses and general public in Lahore. Initially, a pool of 200 items was generated tapping different types of impact of terrorism in the society (e.g., emotional, psychological, and socio-cultural). An expert opinion based pool of 95 items was retained for initial empirical evaluation on four groups (students, general public, terror attack survivors, and security forces,  $N = 280$ ). The factor analytic strategy generated 5 clusters with 64 items, labeled as State Affairs, Psychosocial Distress, Civic Affairs, Governance Issues, and Resilience. TIS demonstrated significant construct validity and reliability overall and for its 5 subscales. Item analysis and alpha coefficients revealed significantly high internal consistency for the measure. Further analysis of data revealed significant differences among participant groups for impact of terrorism.

*Keywords:* terrorism, Pakistan, impact of terrorism, resilience

The impact of terrorism cannot be limited to any one dimension as acts of terrorism may affect the entire life and society. Terrorism is an art with the key aim to demoralize the community and undermine its sense of security; it leaves everlasting effects

on the masses. There is no officially agreed upon definition of terrorism; it depends on who is defining and which type of event is being defined, e.g., terrorism as both a tactic and strategy; a crime and a holy duty; a justified reaction to oppression and an inexcusable abomination. But it does not mean that no one has tried to define terrorism. Different states have coined different terms to distinguish terrorism from war and other types of violence. Initially, terrorism had been defined as criminal acts directed against a state and intended or calculated to create a state of terror in the minds of particular persons, a group of persons or the general public (Saul, 2006).

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Dr. Farah Malik, Department of Psychology, GC University, Katchery Road, Lahore. Ms. Rabia Khawar, Lecturer, GCU, Faisalabad. Ms. Rehana Ilyas, PhD Scholar, Ms. Rabia Iftikhar, Research Associate, Ms. Saima Saeed, Research Assistant, Department of Psychology, GC University, Katchery Road, Lahore.

Correspondence concerning this article should be addressed to Dr. Farah Malik, Chairperson, Department of Psychology, GC University, Katchery Road, Lahore 54000, Pakistan. Email: dr.farahmalik@gcu.edu.pk; drfarahmalik@gmail.com

The US Department of Defense's

Dictionary of Military (2009) has recently defined terrorism as the calculated use of unlawful violence or threat of unlawful violence to inculcate fear; and is intended to coerce or to intimidate governments or societies in the pursuit of goals generally political, religious, or ideological (as cited in Zalman, 2010a). Three key elements discussed here are fear, violence and intimidation. International Terrorism and Security Research (2001) has identified that terrorist groups commit acts of violence to produce widespread fear and to obtain worldwide/national/local recognition for their cause by attracting the attention of the media. Terrorism is intended to harass, weaken, or embarrass the government and security forces. It may resort to stealing or extorting money and equipment, especially weapons and ammunition vital to the operation of their group. It may destroy facilities or disrupt lines of communication in order to create doubts about capability of government to provide for and protect its citizens. This results in discouragement of foreign investments, tourists and other assistance programs that can affect the target country's economy and support of the government in power. It also influences government decisions, legislation, or other critical decisions. Also, the terrorists strategically force the government and security forces to concentrate their efforts in urban areas, thereby establishing themselves among the local populace in rural areas meanwhile.

Pakistan has played a key role in the global scenario of terrorism.

Political leaders in different eras have taken up this issue in varying ways. Even when Pakistan has become a US ally in this war, she is still blamed for having Taliban, Mujahidin, and Al Qaeda in its Northern Areas. In fact, Pakistan has very complex relationship with terrorism. During 80's, government under military dictatorship served as a primary incubator for the Mujahidins (now Taliban) by adopting a diplomatic tie with the group. The government later decided to join forces with US after 9/11 for global war on terrorism. However, Pakistanis as a nation did not agree to this. They considered the nominated terrorists as holy warriors who went against US in Kashmir. In 2002, government of Pakistan, under military dictatorship, decided not to support madrassas and took more counter-terrorism actions. This resulted in more reaction from terrorists in Pakistan. The US forces were allowed for the military operation in Pakistan northern tribal areas so that the war could be ended. But the war continued for the next two years which nurtured and strengthened Taliban in the country. In 2008, civilian rule again replaced the military as the latter was unable to deal with the issue of extremism in certain areas (Zalman, 2010b). This permission to US armed forces to operate from our land has created a negative perception of US among public in Pakistan. Although US and Pakistan are close allies in war against terrorism now, but Pakistani nation is faced with increasing terror attacks on its security forces and public. Therefore, Pakistani people carry negative perceptions about America in

terms of the latter's negative and dominant influence behind the country's situation and interference at all levels. (Tara & Rubina, 2010).

Although the whole world is facing the problem of terrorist activities in one or some other form, these activities and attacks are spreading like cancer in Pakistan. Viewing the history, terrorist attacks movement started on November 6, 2002 when a lady blew herself in front of a newspaper office in Karachi, injuring 6 other people. Since then, there have been countless incidents claiming lives in hundreds and injuries in thousands. There has been a steady rise in the incidents since 2006 with its peak in August 2007. NWFP is the most affected province followed by Federally Administered Tribal Areas (FATA). The security personnel have been the main target of suicide bombing, followed by religious sects (Yousafzai & Siddiqui, 2007). The wave of attacks is going on and every month, and sometimes every week there are attacks throughout the country. Big cities as Karachi, Peshawar and Lahore are at the highest risk. Security forces and police appear to be helpless to stop such kind of terrorism. In 2010, during the month of Ramadan, there were three attacks in Peshawar, Karachi and Lahore; the most recent one is on Shia's procession in Karachi and in the same evening three suicide attacks were carried out in Lahore at Karbla Game Shah.

According to Southern Association for Institutional Research (SAIR, 2010), Pakistan has been a place of fatalities augmented significantly each instability and widespread strife with

year since 2003 but 2009 might be called the fatal year in its history, with at least 11,585 fatalities in a year (the actual numbers could be even significantly higher). At least 723 major incidents (involving three or more fatalities every time) were reported through 2009 (SATP, 2010). Unsurprisingly, suicide attacks were at the forefront. Compared to 893 deaths in 59 suicide attacks in 2008, the year 2009 recorded a total of 76 suicide attacks, in which 949 persons were killed. In the year 2010, total 34 bomb blasts were observed in Pakistan killing 775 people and 1359 injured (South Asia Terrorism Portal, 2010). Tables 1 and 2 show this alarming picture regarding *Suicide Squad Attacks in Pakistan* as well as the fatalities resulting from the terrorist violence in Pakistan over the years.

In Pakistan, some of these terrorist activities are attributed to the political instability, economic conditions, and standard of life of the masses while others look at this as religious extremism of a portion of the masses of Pakistan. Another school of thought says that the injustice done by world's superpowers towards the third world countries and especially Muslim countries, have led the world to this situation. Yet there is another school of thought that attributes current terrorism activities like blasts and suicide attacks as the game of political gains by world's superpowers; some others have termed this confusion as clash of civilization between West and Islam.

Whatever might be the reason, the ultimate affects are multidimensional and much horrible,

Table 1

*Terrorist Attacks and Fatalities in Pakistan from 2002-2010*

Year	Total incidents	Killed	Injured
2010	34	775	1359
2009	76	949	2356
2008	59	893	1846
2007	54	765	1677
2006	7	161	352
2005	4	84	219
2004	7	89	321
2003	2	69	103
2002	1	15	34

Source: Southern Association for Institutional Research, 2010

Table 2

*Fatalities in Terrorist Violence in Pakistan from 2003-2010*

Year	Civilians	Security Force Personnel	Terrorists/Insurgents	Total
2003	140	24	25	189
2004	435	184	244	863
2005	430	81	137	648
2006	608	325	538	1471
2007	1522	597	1479	3598
2008	2155	654	3906	6715
2009	2324	991	8389	11704
2010*	1296	341	4071	5708
Total	8910	3197	18789	30896

\* Data till September 5, 2010

\* Source: Figures are compiled from news reports and are provisional information.

both for the society and the state in terms of economic security as well as psychological threats to its masses. Suicide terrorism is rising around the globe and it follows a strategic logic

specifically designed to coerce modern liberal democracies to make significant territorial concessions (Pape, 2003). Regardless of the increase in terrorist attacks worldwide,

there is less evidence about the intermediate and long-term psychological consequences of terrorism and other risk factors (Desivilya, Gal, & Ayalon, 1996; Jehel, Duchet, Patemiti, Consoli, & Guelfi, 2001; Shalev, 1992). A large scale telephonic survey in Israel with 905 adult Jewish and Palestinian citizens indicated that exposure to terrorism was significantly related to greater loss of psycho-social resources and to greater PTSD and depressive symptoms and this relationship was reciprocal. Palestinian citizens had significantly higher levels of PTSD and depression than Jews' (Hobfoll, Canetti-Nisim, Johnson, & Robert, 2006). Similarly, Verger et al. (2004) found high prevalence of PTSD symptoms over a period of 2.6 years on the average after the terrorist attack of 1995-96 in France. After reviewing the literature on the psychological impact of terrorism on children and families in the US of the 1993 and September 11 attacks, Pfefferbaum et al. (2005) reported the impact of various forms and degrees of exposure to terrorism on children, while emphasizing the need to look into children's adaptation to mass trauma. Also they noted that studies so far provide critical information regarding the relationship between exposure to mass trauma and outcomes but more refined approaches are needed to address developmental, family and socio-cultural factors in the global context of terrorism.

No one can remain untouched by the after effects after having seen a terrorist attack. In both types of disaster trauma, whether individual or community based, the persons

experience some symptoms, i.e., fear and anxiety, crying, whimpering, screaming, excessive clinging, fear of darkness or animals, confusion, disobedience, depression, nightmares, irritability, fear of being left alone, sleep disturbances, alcohol and other drug use, sensitivity to loud noises, etc. Children might face problems like poor academic performance and behavioral problems in school environment, etc. The research so far has focused on the short-term consequences but long-term problems also need to be studied. Although terrorism has posed severe problems for Pakistan, not much research has been done in this area except a few researchers who have taken the initiative. However, literature from other cultures shows a dangerous picture of its aftermath on families, individuals, and nation at large. Every second person in Pakistan is suffering from psychological stress and strain due to upheavals in the country. Severe economic crisis, lawlessness and terrorism are deteriorating people's mental health. There is no national data present on the psychological effects of terrorism on general population in Pakistan but studies carried out in other countries show that the direct victims of terrorism develop acute stress disorder, their risk of serious mental illness increases, development of post traumatic stress disorder can go up to the range of 12-16 % as reported from a meta analysis and substance abuse is another complication. Children being more vulnerable may develop anxiety and depressive disorders. There is also an evidence of physical problems. Resilience factors are also enhanced

by the social support and periodic screening of mental health and the services provided (Gadith, 2009). Terrorism is significantly related to both greater PTSD and depressive symptoms. PTSD can lead to defensive coping ultimately (Hobfoll et al., 2006). The psychological impact of terrorism is not limited to the way people behave during attacks, rather fear for having terror attacks in future might be extremely incapacitating in terms of psychological functioning (Sommer, Tamir, Maguen, & Litz, 2005). This has been explored by many researchers in terms of cognitive distortions predisposing psychopathology especially anxiety disorders in terms of uncertainty and threat of future harm (Beck, 1976, Clark, 1986; Schniering & Rapee, 2004, Sinclair & LoCicero, 2006).

For the people of Pakistan, psychological impact is not the only story; rather, terror attack is a multidimensional phenomenon that needs to be explored from the perspective of people of Pakistan who are facing this situation and are surviving under this threat for last decade. It might have adverse impact on their mental and psychological health, the economic and social infrastructure of the society. There is a massive need to understand and explore the impact of the current situation from the indigenous perspective of the people of Pakistan who are the real victims of this devastating situation. As far as perception of people in Pakistan regarding September 11 attacks in US is concerned, in a study carried out right after that incident, Rehman and

Malik (2003) found a sympathetic attitude of Pakistani public towards US nation for having innocent people targeted by the attackers which cannot be justified on both religious and antagonistic grounds. Recently many researchers have taken initiatives to understand the impact of terror attacks on the mental health of different segments of Pakistani population e.g., Malik, Hassan, and Perveen (2010) investigated the impact of the suicide attacks on the mental health of adolescents in Pakistan through an indigenously developed Mental Health Questionnaire and found 58% of them scored well above the cut off score of MHQ depicting mental health concerns as an outcome of suicide terrorism. Qualitative analysis revealed major themes of disruptive routine, fear and psychological concerns of fear, low psychological well-being, and emotional disturbances. Haq and Kausar (2010) in a study on male traffic police wardens (being the easy target for terror attacks among security forces) in Lahore found a significant relationship among resilience, cognitive appraisal and coping strategies; however, traffic police wardens scored higher on state resilience and perceive it as having personal significance. Mostly, they use coping strategies included avoidance focused coping followed by active practical and religious coping. Nayab and Kamal (2010) found that the people who witness horrifying terrorist attacks experience more death anxiety and stress. Hence, there is a need to look into the aftermath of this mass trauma and this need to address family and socio-cultural factors in the context of

terrorism has also been highlighted in the western research (Pfefferbaum et al., 2005). As posed by Bongar (2006) that "psychological science to provide effective treatment to the victims of such horrendous events doesn't exist." It was later elaborated on by Ruzek, Maguen, and Litz (2006) while highlighting the need of generating particular information which could help these people to cope with the ongoing threat of terrorism. Ajmal (2010) has argued that a comprehensive information and communication strategy is required to deal with the situation in Pakistan. Therefore, the critical scenario of Pakistan, where people are facing an incident like 9/11 every day and at times even more than one incidents a day, demands indigenous research and especially the development of the indigenous measures to understand the effects of terrorism from the point of view of Pakistani people. Therefore, the current study is an effort to develop an indigenous self-report scale to measure the impact of terror attacks on the people of Pakistan who directly or indirectly are influenced by the prevailing situation of insecurity and risk. The main objective of the current research was to look at terrorism by developing and validating a new measure, the Terrorism Impact Scale (TIS) based on the indigenously generated data regarding the perceived impact on the people of Pakistan with regard to their mental or psychological health, other related aspects of their life and Pakistani socio-cultural context at large. Moreover, investigating people's perceptions about the issue of terrorism in peculiar context of

Pakistan to come up with its definition in this particular context was another important objective.

## Method

### Phase I: Item Generation

#### *Participants*

The participants for in-depth interviews included two religious scholars (1 Shia and 1 Sunni). The sample for the focus groups included 9 professionals/experts from different walks of life as educationists, economists, psychologists, journalists, personnel from security forces, media anchor persons and 10 MPhil and PhD students of Psychology and other departments at GC University, Lahore.

#### *Procedure*

In step 1, phenomenology of terrorism and its impact on people of Pakistan was explored with the help of focus groups, semi-structured interviews with religious scholars and public opinion pool. Semi-structured interviews were conducted with two religious scholars, one each from Shia and Sunni sects to collect in-depth information. These interviews were recorded with their permission to extract information. They were asked as to how they defined terrorism and saw its impacts on general public and society at large.

Two focus groups were conducted; one with professionals and experts from different walks of life and second with 10 students of MPhil and PhD from different departments in GC University including Psychology. Content analysis of these two focus

groups revealed different aspects of terrorism like its defining characteristics, potential factors, impact on various aspects of people's life and different coping strategies etc.

To develop a larger opinion pool, a preliminary questionnaire was constructed which was administered to the students ( $n = 30$ ), general public ( $n = 30$ ) and survivors and eye witnesses of terrorist attacks ( $n = 30$ ) at different places in Lahore being the most recent targets of terror attacks; Moon Market, FIA building and surrounding area in Regal Chowk, and surrounding areas of Rescue 15 building in China Chowk.

As a result of this exercise, a pool of 200 items was derived out of the content analysis of the focus groups, in-depth interviews and items mentioned by the general public. The impacts of terrorism mentioned by the participants included in Phase I mostly indicated negative or adverse impacts but some positive perceptions were also identified. Perceived negative impact was related to the cognitive, behavioral and affective turmoil, social paralyzes and prejudices, religious detachment and misinterpretation, declined educational standards, and lack of coping mechanisms. Positive impact indicated by all participants included determination, increasing sense of patriotism and unity etc.

This pool was then subjected to the expert opinion (research team and 2 experts in the field of Psychology) for the clarity of the items and to avoid any overlap which ended up at the selection of 95 items. These items were then transformed into statements of a self-report question-

naire/measure to be rated on 4-point Likert scale with response categories of "Strongly Disagree, Disagree, Agree, Strongly Agree" scored from 1 - 4 and reverse for the items indicating positive impact.

A try out study was carried out with 10 students at GC University, Lahore and 10 individuals from general public to confirm the comprehension level for the sample which indicated problems of distinguishing a few statements being as positive or negative. These statements were modified accordingly.

## Phase II: Item Evaluation

### *Sample*

A stratified sample of 300 adults with age of 18 to 65 years was drawn from 4 segments of the target population but final analysis was carried out with 280 total participants due to 20 dropouts. Sample included 100 students (50 men, 50 women) of BA/BSc Hons, MA/M Sc, M Phil and PhD from different institutions of Lahore, i.e., GC University, Lahore College for Women University, COMSATS and University of the Punjab with age range from 18 - 24 years ( $M = 21.24$ ,  $SD = 3.3$ ); 100 individuals from general public, with an equal number of men and women, included professionals from different walks of life such as doctors, lawyers, educationists, businessmen, traders, shopkeepers, drivers, clerks etc. and also working and non-working women. Third group included 50 survivors of terrorist/suicide attacks ( $n = 50$ ) in Lahore drawn from the Regal Chowk, Moon Market, RA Bazaar, being the most recent affected areas in

Lahore for the incidents of the terrorist attacks at the time of the current study (age  $M = 34.68$ ,  $SD = 12.5$ ). Fifty officials from security forces were approached from Rescue 1122, Punjab Police, Traffic wardens and Elite Force (age  $M = 31.13$ ,  $SD = 3.6$ ) but their turn out rate was 30. All the survivors and security officials were males,

Matriculation (10<sup>th</sup> grade) was the minimum education required for the participants of the current study.

### *Procedure*

The questionnaire comprising of 95 items/statements was subjected to empirical evaluation on a sample of 280 participants drawn from four groups; students, public, survivors of suicide attacks and security forces for determining the psychometric characteristics of the measure.

The respondents were approached individually at their respective places, offices, shops, or universities and colleges after seeking formal permission and informed consent to participate. They were ensured confidentiality of the information. The participants were more than willing to give their opinion on this crucial issue. The data were then subjected to statistical evaluation for determining the construct validity, reliability and internal consistency of the measure.

The data were then subjected to the Principal Component Analysis with Varimax rotation and item analysis to finalize the measure (see Tables 1 & 2). The common constructs identified through factor analysis and item analysis were

labeled according to the emerging themes reflecting items clustered together and the measure was named as Terrorism Impact Scale (TIS). Therefore, the final version of the TIS comprised 64 items divided into 5 subscales named as State Affairs (17 items), Psychosocial Distress (19 items), Governance Issues (13 items), Civic Affairs (9 items), and Resilience (6 items). Out of 64 total items of TIS 6 positive items needed reverse scoring.

### Phase III: Reliability Data

Test-retest reliability for TIS was determined while administering it to the available samples of general public ( $n = 52$ ), students ( $n = 58$ ) and security forces personnel ( $n = 30$ ) over a period of 6-8 weeks.

## **Results**

### *Item Analysis*

Item analysis was conducted by computing item-total correlation technique on a sample almost 3 times greater ( $N = 280$ ) than number of items (95) which is an acceptable condition although ideal ratio is 5 times (Comrey & Lee, 1991; Gorsuch, 1983). The item analysis in Table 1 shows that all the selected items were significantly correlated with total Terrorism Impact Scale score except 3 items retained for the final scale; item numbers 83, 90, and 92. The major criteria for retaining items in the final measure was correlation  $\geq .20$ , whereas items 83, 90, and 92 showed correlation slightly  $\leq .20$ . It is usually recommended to exclude such items

especially if they affect the total reliability of the scale; but in certain cases these can be retained with appropriate rationale and if they do not affect the overall reliability of the measure (George & Mallery, 2006). Hence, these items not only showed high loadings on Factor 5 (Resilience as shown in Table 2) but also they did not affect the overall reliability of the measure which was above .80  $\alpha$  if item was deleted. It is also important to note that these items had reverse scoring having depicted positive impact of terrorism, which could also be the reason of showing lower correlation coefficients. Moreover, overall reliability of the scale remained significantly high ( $r = .93$ ) even after retaining these items.

### *Construct Validity*

Terrorism Impact Scale was finalized on the basis of the exploratory Principle Component Analysis with Varimax rotation which ended up 5 factors solution based on a criterion of factor loadings of .35 and above exclusively on one factor. Total 64 out of 95 items were clearly clustered into 5 separate categories measuring different dimensions of impact of terrorism, which were named as:

- Factor1: State Affairs (17 items)
- Factor2: Psychosocial Distress (19 items)
- Factor3: Governance Issues (13 items)
- Factor4: Civic Affairs (9 items)
- Factor5: Resilience (6 items)

Therefore TIS finally contained 64 items; 58 items mentioning negative and 6 items indicating positive impact (reverse scoring). The results depicted that Factor 1 had an

Eigen value of 13.63 and it explained 9.05% of the total variance. Factor 2 had an Eigen value of 3.52 and Factors 3, 4 and 5 had Eigen values of 2.94, 2.72 and 2.32 respectively with cumulative variance ranging from 8.95 to 4.45. The overall variance explained by five factors was 34.4% (Table 2). Interestingly, most of the factors emerged mainly depicted the adverse and negative impacts of the terrorism situation in the country except factor 5 which measured positive impacts of terrorism.

Factors identified through factor analysis were named keeping in view the common theme depicted by the items under each category. Factor 1 was labeled as State Affairs (17 items) because it clustered all the items mentioning adverse impact on the country affairs as a state, Factor 2 grouped items measuring psychosocial distress (19 items) of the general public in the society, Factor 3 clustered the 13 items related to the governance issues and mis-management at the part of the government to handle the problem of terrorism in the country, so it was labeled as Governance Issues, Factor 4 clustered overall impact on the society so it was named as Civic Affairs (9 items) and Factor 5 clustered items showing positive outcome at the part of the public out of the negative situation in the society so it was named as Resilience (6 items). Total score on the scale was sum of scores on all 64 items which ranged from 64-320; higher the score higher would be the adverse impact of the situation of terrorism. The scores on each of the subscales was sum of the items of the scale which varied in number. In order

to make scores on different subscales comparable, scaled scores were computed by using scaled score formula: scaled score =  $(X/I) / (\text{Option}) \times 10$  where, X= Total score on a category, I= Number of items in specific category, and Option= No. of response options for each category.

The computed scale scores were then used for further analysis (Mckinlay, Brooks, Bond, Martinage, & Marshal, 1981 as cited in Kausar & Saghir, 2010).

Construct validity was further endorsed by computing correlation matrix for scores of five subscales and total TIS score. It depicted significant inter-correlations among factors except for factor 5 i.e. Resilience, which showed significant correlation only with factor 3 i.e., Governance Issues ( $r = .22, p < .01$ ). All the five factors were also significantly correlated with the total TIS score (Table 3).

### *Reliability Analyses*

Terrorism Impact Scale demonstrated excellent internal consistency for 64 items, determined by computing Cronbach's alpha which was highly significant ( $\alpha = .93$ ). The coefficient  $\alpha$  for its five subscales ranged from .76 - .87 as depicted in Table 4.

The split-half reliability was also significant; part 1 ( $r = .90$ ) and part 2

( $r = .86$ ) and correlation between two halves ( $r = .76$ ) with Spearman Brown coefficient of .79 and Guttman split-half coefficient of .78.

Test-retest reliability for TIS was also computed with the available samples of adults ( $n = 52$ ), students ( $n = 58$ ) and security forces personnel ( $n = 30$ ) over a period of 6-8 weeks.

Alpha coefficient for the Phase III sample was .89. Correlations were computed between their scores in Phase II and Phase III and were highly significant for total TIS ( $r = .88$ ) as well as its subscales; State Affairs ( $r = .85$ ), Psychosocial Distress ( $r = .82$ ), Governance Issues ( $r = .86$ ), Civic Affairs ( $r = .84$ ) and Resilience ( $r = .73$ ).

### *Determining Cut-off Scores*

Total score on TIS would be the sum of the scores on all 64 items, higher the score higher would be the adverse impact of terrorism. The median score computed for the sample was 221 with a mean of 217.45 ( $SD = 20.84$ ),  $SE = 1.25$ ) (Table 5). Frequency and percentage for the sample was computed by taking median score as a baseline which depicted that almost half of the sample was well above it ( $f = 141, 49.7\%$ ). Median score might be taken as cut-off point for the impact of terrorism.

Table 1

*Item Analysis for the Selected Items for Terrorism Impact Scale (N = 280, Items = 64)*

Items	r	Items	r
2	.40	51	.36
4	.41	57	.20
5	.31	58	.40
6	.31	59	.26
7	.47	60	.46
8	.33	61	.36
11	.32	62	.37
12	.29	63	.50
13	.32	64	.45
15	.36	66	.47
16	.45	67	.49
17	.49	68	.43
20	.49	71	.40
21	.44	72	.43
26	.45	73	.40
27	.46	74	.33
29	.38	76	.48
30	.52	77	.38
31	.56	78	.22
32	.42	79	.34
33	.57	81	.49
34	.53	83	.16
36	.58	84	.52
37	.40	86	.50
38	.57	87	.55
40	.52	88	.45
41	.51	89	.37
42	.34	90	.15
47	.42	91	.44
48	.45	92	.17
49	.38	93	.21
50	.50	94	.20

*Note: all values were significant at 2 tailed alpha level of .01.*

Table 2

Factor Loadings for the Items Selected for TIS obtained from Principal Component Factor Analysis (N = 280) (Items = 58)

Item No.	Statements	F1	F2	F3	F4	F5	M	SD
		SA	PD	GI	CA	RS		
		(Items =17)	(Items =16)	(Items =10)	(Items = 9)	(Items = 6)		
21	Selfishness has been increased in the country....	.41	-	-	-	-	3.39	.80
26	Negativity in thoughts and attitudes has emerged....	.39	-	-	-	-	3.42	.76
27	Pakistan has become isolated at a global level....	.39	-	-	-	-	3.14	.89
32	Media is exerting negative impact on immature....	.66	-	-	-	-	3.66	.61
33	Country has become economically dependent.	.69	-	-	-	-	3.55	.69
34	There is prevailing a common unrest in the country....	.54	-	-	-	-	3.45	.71
36	Negative effects on daily routine life.....	.59	-	-	-	-	3.53	.65
37	Children are getting aware of destructive weapons.....	.48	-	-	-	-	3.44	.82
38	Nation has developed inferiority complex.....	.58	-	-	-	-	3.35	.85
40	People's religious feelings have undermined ....	.51	-	-	-	-	3.33	.85
41	There is an increased suspiciousness in the country.....	.49	-	-	-	-	3.44	.77
42	Developmental projects have adversely been.....	.43	-	-	-	-	3.65	.56
47	Increased mistrust for the leaders and state....	.44	-	-	-	-	3.45	.72
49	Doubts about religious madrasas institutions....	.52	-	-	-	-	3.32	.85
50	Hopelessness about the current situation ...	.49	-	-	-	-	3.49	.65
51	Many innocent people are put behind the bars.....	.44	-	-	-	-	3.46	.72
81	Our children are learning inappropriate social values...	.49	-	-	-	-	3.63	.61
2	Nerves of the people have been shattered....	-	.47	-	-	-	3.18	.92
16	Increased social segregation in the society....	-	.38	-	-	-	3.36	.83
17	People are becoming anxious for losing their loved.....	-	.39	-	-	-	3.20	.85
20	Cognitive functioning of the people is deteriorating....	-	.56	-	-	-	3.26	.78

Continued

Item No.	Statements	F1	F2	F3	F4	F5	M	SD
		SA	PD	GI	CA	RS		
48	Increased suicidal trends in the society.....	-	.41	-	-	-	3.05	.98
58	Increased sense of deprivation in the society.....	-	.52	-	-	-	3.57	.60
60	People are apprehensive to join hands in social.....	-	.57	-	-	-	3.30	.87
64	Complaints of physical ailment are on increase.....	-	.40	-	-	-	3.31	.83
66	Society is losing its human grounds....	-	.41	-	-	-	3.34	.83
67	People have become more obsessive.....	-	.37	-	-	-	3.51	.64
68	People are restricted in all spheres of life.....	-	.41	-	-	-	3.27	.80
76	Death anxiety is increasing in personal. ....	-	.49	-	-	-	3.41	.79
84	Collective activities are decreasing in the society.....	-	.39	-	-	-	3.26	.83
86	People are being victim of terror....	-	.38	-	-	-	3.51	.52
88	Employees in the security agencies are giving up ....	-	.58	-	-	-	2.84	.95
91	Relationships and social gatherings have badly.....	-	.45	-	-	-	2.81	.96
59	Financial resources of the country are getting .....	-	-	.47	-	-	3.65	.64
61	There is a general sense of insecurity prevailing ...	-	-	.49	-	-	3.55	.64
62	People want to be more aware of the situation in....	-	-	.45	-	-	3.64	.65
63	Apprehension about administrative affairs has.....	-	-	.48	-	-	3.73	.52
71	Government officials and Political leaders are .....	-	-	.59	-	-	3.71	.64
77	Media needs some ethical codes ....	-	-	.49	-	-	3.45	.69
78	Government in itself is confused...	-	-	.39	-	-	3.54	.86
79	Security measures have been forces in all institution...	-	-	.41	-	-	3.55	.72
87	Mental and psychological problems in the society.....	-	-	.38	-	-	3.62	.60
89	Security measures are creating hindrances for.....	-	-	.37	-	-	3.50	.70
4	Aggression in the society is on increase...	-	-	-	.39	-	3.34	.79
5	Society is suffering from uncertainty....	-	-	-	.47	-	3.65	.60
6	Rigidity in the society is increasing ....	-	-	-	.48	-	3.34	.72

Continued

Item No.	Statements	F1	F2	F3	F4	F5	M	SD
		SA	PD	GI	CA	RS		
		Items =17)	(Items =19)	(Items =13)	(Items = 9)	(Items = 6)		
7	Decision power of the people has adversely been ....	-	-	-	.49	-	3.31	.70
8	Our future generation is at risk.....	-	-	-	.63	-	3.57	.70
11	Academic activities in the institutions have been ....	-	-	-	.54	-	3.57	.65
12	People are being deprived of their loved ones.....	-	-	-	.56	-	3.66	.64
13	The reputation of Islam at global level has.....	-	-	-	.52	-	3.68	.65
15	Collective ego of the society is getting hurt....	-	-	-	.54	-	3.69	.61
57	People have developed the passion to eliminate ....	-	-	-	-	.58	3.30	.92
83	Patriotism has been increased among police .....	-	-	-	-	.62	3.04	.98
90	People have become more patriotic.....	-	-	-	-	.66	2.97	.96
92	People's attitude towards security agencies .....	-	-	-	-	.64	2.61	.07
93	People are actively participating in social welfare....	-	-	-	-	.71	2.73	.94
94	People have become more caring and concerned .....	-	-	-	-	.57	2.92	.91
Eigen Value:		13.63	3.52	2.94	2.72	2.32		
% Variance		9.05	8.59	6.46	5.86	4.47		
Cum. %		9.05	17.6	24.1	29.9	34.4		

Note: SA = State Affairs, PD = Psychosocial Distress, GI = Governance Issues, CA = Civic Affairs, RS = Resilience

\*Urdu version is available with corresponding author

However, the cut-off scores for TIS were determined based on the percentile analysis of the scale scores; the frequency distribution of the scores indicated that almost 49.6% of respondents obtained a score of 205 and 74.6% gained a score of 232 so these were taken as the lower and upper ranges for measuring impact of terrorism. The percentile

analysis for 25th, 50th and 75th quartiles indicated a score of 206 at the 25th percentile, 221 and 233 at 50th and 75th percentiles respectively (Table 6).

Therefore the score of below-206 was taken as indicative of mild impact of terrorism; 207-221 could be taken as indicators of moderate and 222-256 for high impact of terrorism.

Table 3

*Correlation Matrix of the Five Subscales and Total Score of Terrorism Impact Scale (N = 280)*

Subscales	2	3	4	5	6
1. SA	.68**	.55**	.49**	.06	.85**
2. PD	-	.59**	.54**	.09	.89**
3. GI	-	-	.40*	.22*	.76**
4. CA	-	-	-	.02	.66**
5. RS	-	-	-	-	.31*
6. TIS	-	-	-	-	-

\* $p < .01$ . \*\* $p < .001$ .

Note: SA = State Affairs, PD = Psychosocial Distress, GI = Governance Issues, CA = Civic Affairs, RS = Resilience

Table 4

*Reliability Analysis and Descriptive Statistics for TIS (N = 280)*

Subscales	Items	Range	Mdn	M	SD	$\alpha$
State Affairs	17	68	60	58.7	7.18	.87
Psychosocial Distress	19	76	64	62.6	8.71	.87
Governance Issues	13	52	48	46.9	4.55	.78
Civic Affairs	9	36	33	31.8	3.59	.76
Resilience	6	24	18	17.6	4.05	.79
Total TIS	64	256	221	217.4	20.8	.93

Table 5

*Means and Standard Deviations for Participant Groups and Total Samples for TIS Scores*

Groups	<i>n</i>	<i>M (SD)</i>	<i>SE</i>
Students	100	209.02 (24.68)	2.480
General Public	100	218.22 (18.39)	1.840
Security Forces	30	221.73 (9.14)	1.670
Survivors	50	230.04 (13.94)	1.972
Total Sample	280	217.45 (20.84)	1.248

Table 6

*Quartiles for Terrorism Impact Subscales (N = 280)*

Subscales	25 <sup>th</sup> %	50 <sup>th</sup> %	75 <sup>th</sup> %
State Affairs	55	60	64
Psychosocial Distress	57.25	64	69
Governance Issues	45	48	50
Civic Affairs	30	33	34
Resilience	15	18	20
Total TIS	206	221	233

Mean score of the current sample fell in the range of moderate impact overall which was different for four groups; for students it was 209.02 (24.68), general public 218.22 (18.396), security services 221.73 (9.14) and for survivors' group it was 230.04 (13.94) (Figure 1; Table 5).

Figure 1 shows significant difference for four participant groups for total score on Terrorism Impact Scale.

Figure 2 indicates differences among the four participant groups for the subscales of TIS.

Gender-wise cut off scores were not computed for the scale as differences were non-significant. Figure 3 indicates no gender difference apparently except for a slight difference between men and women for one subscale of Civic Affairs.

The data were further subjected to

Multivariate Analysis of Variance to determine the significance of these differences among different participant groups and gender for overall Terrorism Impact Scale scores and its sub-scales (Table 7). There were significant differences among participant groups for overall TIS scores,  $F(3, 271) = 5.67, p < .01$ . Participants' perception about State Affairs was also significantly different,  $F(3, 271) = 4.74, p < .01$ . Diversity was also found out for psycho-social distress, showing highly significant differences among participants,  $F(3, 271) = 4.24, p < .01$ . Impact of terrorism in terms of Governance Issues, again showed significant difference for sample,  $F(3, 271) = 6.18, p < .01$ . Participants also showed significant differences for the experience of Resilience,  $F(3, 271) =$

$3.18, p < .05$ , whereas, no significant difference was found for sub-scale of Civic Affairs,  $F(3, 271) = 1.84, p = ns$ . Impact of terrorism was also investigated for among men and women but no significant gender differences were found for total TIS score and four sub-scales,  $F(3, 271) = 1.15, p = ns$ . Interactions of participant groups and gender were also non significant except for the State Affairs,  $F(3, 271) = 2.96, p < .05$ .

State Affairs subscale was also separately treated for gender differences by breaking the analysis down to *t*-test and the result was highly significant,  $t(278) = 2.58, p < .01$ , showing that women scored higher ( $M = 60.11, SD = 5.86$ ) on State Affairs as compared to men ( $M = 57.83, SD = 7.74$ ). LSD Post-Hoc analysis indicated specific differences

Figure 1

Mean Scores of Participant Groups for Total TIS Scores

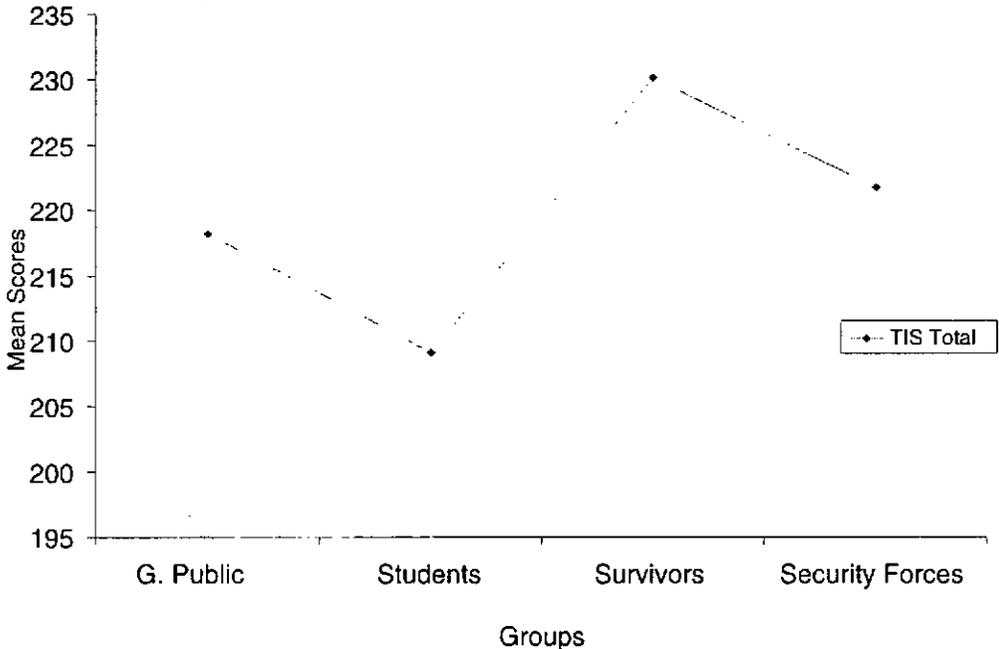


Figure 2  
*Mean Scores of Participant Groups on TIS Subscales*

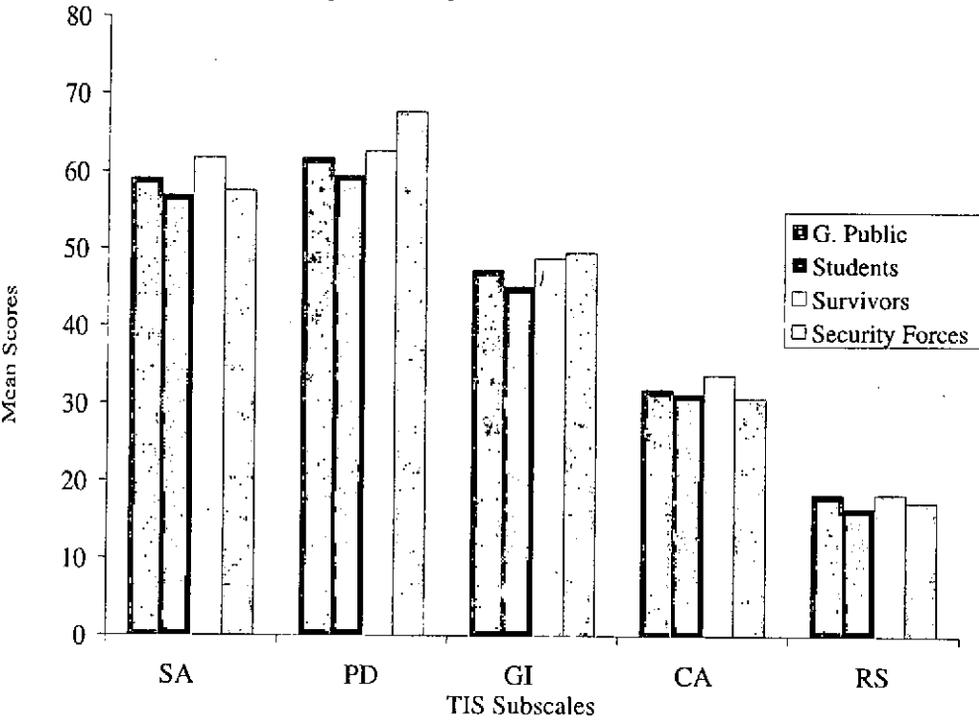


Figure 3  
*Gender Differences for TIS Subscales*

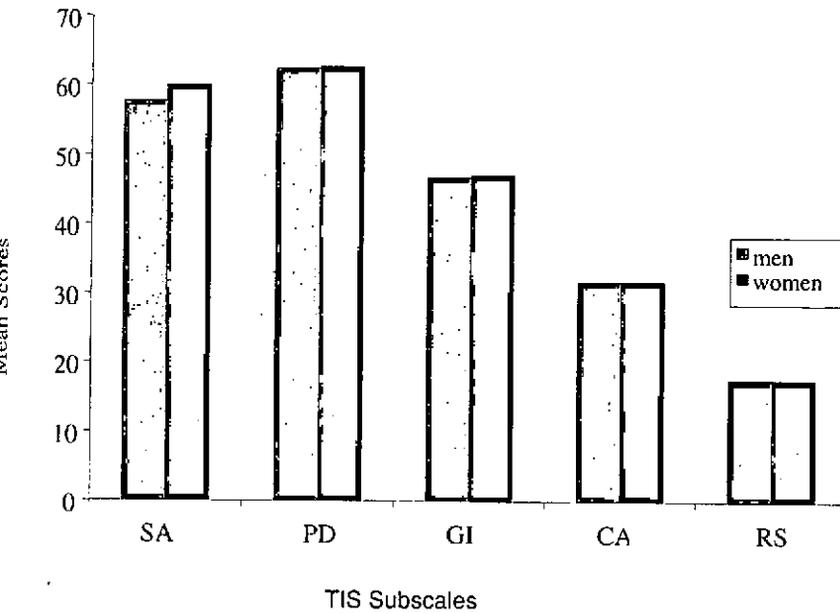


Table 7  
*MANOVA of Terrorism Impact Scale Scores for 4 Participant Groups*

Source	Dependent Variables	SS	df	MS	F
Participant Groups	State Affairs	645.32	3	215.11	4.74**
	Psychosocial Distress	808.97	3	269.65	4.25**
	Governance Issues	329.28	3	109.76	6.18**
	Resilience	152.40	3	50.80	3.18*
	Total TIS	6153.16	3	2051.05	5.67**
Groups x Gender	State Affairs	402.65	3	134.21	2.96*
Error	State Affairs	12289.29	271	45.34	
	Psychosocial Distress	17216.70	271	63.53	
	Governance Issues	4809.01	271	17.74	
	Resilience	4331.61	271	15.98	
	Total TIS	98007.12	271	361.65	

\* $p < .05$ . \*\* $p < 01$ .

Note: All non-significant results are excluded.

among participant groups (Table 8).

Impact of terrorism was worst for the groups of terrorism attack survivors and security forces for total score of the scale as compared to laypersons and students. Overall, students' group appeared to be the least affected group of all the participants on the total TIS score and the subscales, whereas survivors and security forces were almost equally influenced by terrorism.

### Discussion

The main objective of the current study was to develop an indigenous

measure to assess the impact of the current prevailing negative scenario in Pakistan on its people. Many western studies have been carried out to look into the impact of terrorist attacks and suicidal bombing, especially after 9/11 and most of them included survivors of terrorist attacks. Some of the researches have been done in Israel and Palestine. Now, many of the Asian countries have become the victims of terrorist attacks and Pakistan amongst them is on the hit list due to its strategic and geographic value, certain foreign affairs policies, especially, being a US ally in the war against terror. Therefore the aim was

Table 8

*Pair-wise Comparisons among Participant Groups Using LSD Post hoc for TIS and its Subscales*

Pairs	<i>M.diff</i>	<i>SE</i>	<i>p</i>
TIS Total			
1 & 2	-9.20	2.70	.001
1 & 3	-12.71	3.96	.001
1 & 4	-21.02	3.30	.001
2 & 4	-11.82	3.29	.001
State Affairs			
1 & 2	-2.24	.95	.05
1 & 4	-4.89	1.17	.001
2 & 4	-2.56	1.17	.05
3 & 4	-4.31	1.56	.01
Psychosocial Distress			
1 & 2	-2.43	1.13	.05
1 & 3	-7.47	1.66	.001
1 & 4	-8.27	1.38	.001
2 & 3	-5.05	1.67	.01
2 & 4	-5.84	1.38	.001
Governance Issues			
1 & 2	-2.15	.60	.001
1 & 3	-4.44	.88	.01
1 & 4	-3.65	.73	.001
2 & 3	-2.29	.88	.01
2 & 4	-1.50	.73	.05
Civic Affairs			
1 & 4	-2.51	.60	.001
2 & 4	-1.84	.60	.01
3 & 4	-2.99	.80	.001
Resilience			
1 & 2	-1.71	.57	.01
1 & 4	-1.70	.69	.01

Note: 1 = students, 2 = general public, 3 = security forces, 4 = survivors  
 All non-significant results are excluded.

to develop a valid and reliable self-report measure to identify the impact of terrorism on the people of Pakistan in this specific socio-cultural context. In the item generation phase, participants from diverse fields were recruited to have broader pool of items. Finally for empirical evaluation of the items' pool, four adult groups were drawn with ages 18 years and above. Basic purpose of this categorization of participant groups into students, general public, security forces personnel and survivors was to investigate the nature of the effects of terrorism on those who have witnessed or experienced such events either directly or through media and might be at risk in future. Following the lengthy scale development procedure, 64 items were retained which included 58 items showing adverse impacts of terrorism and only 6 items depicting positive after effects in terms of resilience. Empirically generated constructs for impact of terrorism represented different aspects of life being affected by the wave of terrorist attacks, both at individual level and on society at large. As the items for TIS were generated purely on the basis of public and expert opinion, it embodied people's grave concern about this horrifying act of brutality against humanity in the name of religion.

The results of the principal component analysis with varimax rotation followed by item analysis revealed five distinct factors covering the relevant constructs expressing different aspects regarding the impacts of terrorism as recommended by Nunnally (1978). Items showing item-total correlation  $r \geq .20$  were retained

for the final version of the scale. Factor 1 clustered items with high loadings on the items reflecting similar concerns about the issues faced by the country as a state. Items included in this factor named as State Affairs depicted people's concern about the worldwide negative interpretation of their religion, country's standing and position in the world, inferiority complex as a nation due to stigma of being terrorists, development of negative attitudes within society. This factor showed high reliability and internal consistency.

The second factor clustered items showing a vivid picture of mental wear and tear and social sufferings of people, increasing intolerance, irritability, uncertainty of the situation, increasing hopelessness, sleep problems, apprehension for being attacked by a suicide bomber along with people's concern for increasing threats for their social life and disturbances in their daily routine work. It was therefore named as Psychosocial Distress. These social and psychological effects had been discussed by many researchers who found terrorism to be significantly related to PTSD and depressive symptoms. PTSD can lead to defensive coping ultimately (Hobfoll et al., 2006) as well as in terms of incapacitating psychological functioning (Somer, Tamir, Maguen, & Litz, 2005). Nayab and Kamal (2010) had found in a study in Pakistani context that the people witnessing horrifying terrorist attacks experienced more death anxiety and stress.

Third factor represented items related to the impact of terrorism on

overall administrative mismanagement at government level. Items clustered here were related to the role and image of politicians, misuse of resource and power, role of media sensation and need for ethical standards, confusing state affairs and policies related to foreign affairs. People were concerned about the wastage of the economic resources to provide security to the leaders and to take other security measures. Reason to this perception might be the inability of the security agencies to stop terrorist attacks despite security arrangements which end up as unproductive exercises and result in destabilization of the socio-economic system in the society; hence this factor was named as Governance Issues.

Nine items loaded high on factor 4 which shared thematic similarities for civic affairs. These items were related to people's concern about social, moral and emotional consequences on the society at large such as increasing indecisiveness, inflexible attitudes, threats for academic activities, future insecurity, loss of loved ones, lack of self reliance as a civil institution, identity as a nation etc. It was therefore labeled as Civic Affairs.

Factor 5 which was finally labeled as Resilience clustered 6 items which represented few positive outcomes of the widespread negative situation in the country. Many items which loaded high on certain factors were excluded due to lower reliability coefficients in item analysis except three items included in Resilience subscale which loaded high on Factor 5, e.g., items 83, 90 and 92. Item analysis didn't show high correlation coefficients for some of these items. Although items

showing item-total correlation  $r \geq .20$  were retained for the final TIS but there is evidence that in certain cases items with slightly low reliabilities  $r = \leq .20$  can be retained with appropriate rationale (Gray & Wilson, 2006). The purpose of retaining these items was logical, i.e., to measure the positive outcomes of a negative situation. Moreover, together these items reflected high reliability of .80 and exclusion of these items did not seem to affect the overall internal consistency of the scale. These items reflected themes such as people's sympathetic attitude towards their brothers and sisters as a nation, positive attitude towards security forces and agencies, helping behavior, patriotism among public, and a determination to fight against terrorism. Many researches carried out in the disaster situations provide evidence for this construct of resilience; studies after earthquake of September 2005 in Pakistan had also revealed the importance of resilience of Pakistani people (e.g., Suhail et al., 2009). Bonanno, Galea, Bucciarelli and Vlahov (2006) also posed in their study carried out 6 months following the 9-11 terrorist attacks in New York, that frequency of resilience, defined as absence of PTSD, was surprisingly high even among people who were in the World Trade Center or in those who were physically wounded in the attack (53.5% and 32.8%, respectively). In the situations where terrorism becomes customary, a collective habituation is common among people (Vazquez, Perez-Sales, Hervas, 2005).

Item-total correlation and internal consistency reliability measure of the

scale were highly significant. Some researchers, e.g., Cronbach and Meehl (1955) have suggested that internal consistency measures may be taken as an evidence of validity and if the underlying theory of attitude being measured suggests high item inter-correlations, the measure of internal consistency may be interpreted as an evidence of construct validity (Wright & Shaw, 1967). The inter-correlations among the sub-scales were highly significant.

The correlation matrix depicted highly significant inter-correlations for all sub-scales/factors with each other except Resilience which was only correlated with factor 3 depicting Governance Issues. The reason might be that this factor did not represent the negative impact of terrorism as all other four factors did; rather, it was depicting some positive outcome of the situation. However, resilience was significantly correlated with the total TIS score. It is important to note that subscale of Resilience was not found to be significantly correlated with the rest of the subscales except for Governance Issues. There was significant positive association between the two which might be explained again in psychological context that perhaps being disappointed from others sources such as government and administration contributes to hardiness and helps in becoming self-reliant and determined.

Gender differences were not found significant for the TIS and its subscales depicting similar gender perception of the prevailing situation in the society. However, Multivariate Analysis of Variance revealed significant differences among

participant groups, not only for total TIS but for all the subscales except Civic Affairs. Gender, when treated separately with *t*-test showed significant differences for State Affairs, as women tended to perceive the situation more adverse as compared to men. Post-Hoc results indicated that students were least affected group on almost all the subscales and on overall TIS score. The reason could be the lack of sense of responsibility in young age, which is peculiar to our society as our youth is dependent on their parents till completion of their studies so they might be less worried about the long-term consequences of terrorism. Moreover, they have a lot of academic and co-curricular activities to indulge in as compared to general public who are responsible for looking after their families and managing resources for them, thus more influenced by terrorist attacks. Survivors and officials of security forces were the most adversely affected group as being at risk directly and witnessing terrorist attacks frequently; yet an interesting finding was that they were equally resilient.

The results also indicated a serious concern of people about attitudes and values. Elderly groups were more concerned with the current scenario and situation after terrorist attacks and equally more hopeful about the future as compared to the students.

There are certain strengths of the study which should be highlighted here; one is the inclusion of people from diversified walks of life in the development of the scale from item generation till its empirical evaluation.

Moreover, for determining its reliability and validity, people at high and low risks of terrorist attacks were included in the sample. The scale may be taken as the first step towards developing an indigenous self-report measure to assess impacts of terrorism specifically in Pakistani socio-cultural and economic context. Finally, TIS with 64 items based on five factor solution showed significant internal consistency (Cronbach's  $\alpha = .93$ ) and construct validity; the emerged factors/subscales/components were named as State Affairs (17 items), Psychosocial Distress (19 items), Governance Issues (13 items), Civic Affairs (9 items) and Resilience (6 items). The study also indicated significant differences among participant groups regarding the impact of terrorist attacks. Survivors and officials from security forces were found to be the most adversely affected by current wave of terrorism. Psychological problems should be addressed with the help of appropriate intervention plans especially for this group which could help in raising their morale and reduce death anxiety; however the psychological concerns of other than these groups also need to be addressed in future research.

### *Limitations & Suggestions*

Although different representative groups were included, data for the current study were mainly drawn from only one city in Punjab, Lahore, that might limit its generalizability. This initial attempt to develop a self-report measure for the assessment of the impact of the unending wave of terrorist attacks in Pakistan needs additional studies to replicate its

psychometric characteristics, especially, the factorial structure and the cut off scores with much larger sample including different groups drawn from different cities throughout Pakistan, which is the future plan for this research project. The group of adolescents needs to be included in the sample as well. This would add to the sensitivity of the measure to identify the intensity of the adverse impacts of terrorism in the larger context.

### *Implications*

This study was designed to fulfill the need to have a self-report measure in order to assess the psychological as well as socio-cultural effects of the ever increasing wave of terrorism on the mental health and social functioning of the people of Pakistan. Terrorism Impact Scale (TIS) with 64 items based on five categories might be taken as a measure to assess people's perception about the adverse impact on the ongoing state affairs, governance issues, civic affairs as well as threat to their mental health in terms of psychosocial distress along with positive effect in terms of resilience. The findings of the study indicated significant differences across participant groups regarding the impacts of terrorist attacks. Survivors, eye witnesses and personnel from security forces were found to be most adversely affected. Mental health of people appears to be at risk due to overall increasing insecurity and threat in the social environment. Psychological problems of people need to be addressed while launching some appropriate trauma

counseling strategies and psycho educational programs for the survivors, security forces personnel and public at large.

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