

## OUTCOMES OF TRAUMA EXPOSURE AMONG ADOLESCENTS OF PAKISTAN: ROLE OF PTSD AND SOCIAL SUPPORT

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### ABSTRACT

**Objective:** To examine the outcomes such as delinquency, pro-sociality and future orientation as a consequence of trauma exposure in traumatized adolescents with and without posttraumatic stress disorder (PTSD) along with examining the mediating role of PTSD.

**Study Design:** Cross sectional study.

**Place and Duration of Study:** International Islamic University, Islamabad, from Jun to Sep 2018.

**Material and Methods:** A total of 600 adolescents (boys=391; girls=209) of age ranged from 12-18 years including traumatized (n=300) and non-traumatized adolescents (n=300) were randomly selected from different regions of Pakistan. The data was collected by using self report delinquency scale, prosocial personality battery, children's future orientation scale, multidimensional scale of perceived social support and UCLA PTSD RI (DSM 5).

**Results:** Analysis showed that traumatized adolescents were higher on PTSD and delinquency whereas were lower on social support, future orientation and prosociality than non-traumatized adolescents. Females scored higher on social support, prosociality and PTSD whereas males were found higher on future orientation and delinquency.

**Conclusion:** The study revealed the mediating role of PTSD between the predictor traumatic exposure and outcomes future orientation, prosociality and delinquency in addition to the moderating role of social support. This study indicates the urge for the timely management of the outcomes as a consequence of exposure to traumatic events.

**Keywords:** Delinquency, Future orientation, PTSD, Social Support, Trauma Exposure.

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### INTRODUCTION

The continuous increase in violence after 9/11 in many parts of the world and particularly in Pakistani society has been putting distressing effects on people's lives. Increase in the cases of suicidal attacks, bomb blasts and target killing etc, have caused massive damage<sup>1</sup>. The issue is becoming very sensitive day by day as violent or nonviolent trauma or any act of terrorism proves to be the most challenging time especially for the psychologically immature/innocent minds of the adolescents. Such immaturity makes them more susceptible to the effects of demanding and unavoidable stressors related to trauma that they have confronted<sup>2</sup>. Some studies have acknowledged the wide-ranging undesirable sequelae

of trauma exposure for adolescents like posttraumatic stress disorder (PTSD); anxiety; depression and impaired educational performance; As a final point, trauma experience leads to behavioral problems, like violent behavior and delinquency<sup>3</sup>. Moreover it is a bitter fact that these adolescents are often unnoticed as traumatized victims and none of them are in a position to challenge the painful effects of trauma either they reside in United States of America, Afghanistan, Iraq, or Pakistan. Adolescents who remain victims of such traumas may show certain undesired responses like disobedience, revengeful self-harming and disaster-prone behaviors. Furthermore, adolescents are more vulnerable to incline towards joining terrorists' groups<sup>2</sup>. Social support is particularly significant in improvement from mental sufferings whenever a person face traumatic events and harsh stress<sup>4</sup>. Whereas, several traumatic events

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consisting of sexual abuse and wars are recognized by destruction of sources along with the collapse of social support networks. Along with social support the "future orientation" which is a person's hope and the amount to which he/ she is thoughtful of his/her future, has its unique importance for adolescents because it is connected to judgment about their education, job, and family. The limited research in this area has highlighted that traumatized youth exhibiting symptoms of PTSD generally show uncertainty regarding their futures and possess pessimistic prospects about others and their own life<sup>5</sup>. Nevertheless, few studies now reveal that many people have benefitted in some manner after experiencing traumatic event<sup>6</sup>. Such self-reported benefits include constructive modifications in person's sense of self, encouraging alterations in one's relations and positive changes in beliefs of life. However, qualitative<sup>7</sup> studies submit that persons who have confronted trauma often react to those incidents by involving in prosocial behavior. Studies have shown that traumatic events have the potential to develop several undesirable physical and psychological outcomes. Researchers have studied the negative outcomes of trauma comprehensively however very little attention has been paid to positive consequences of stressful events. However, the literature on trauma reveals that a traumatic event can trigger positive psychological changes among the individuals exposed to traumatic events as well<sup>8</sup>. In view of these findings, this study has enabled the researcher to understand not only the complex interaction between trauma experiences and antisocial behavior development among adolescents but will expand upon preceding researches as it will document both positive (Prosociality and future orientation) and negative outcomes (PTSD and Delinquency) following trauma. As in the present study, prosociality which is a positive trait has also been addressed; therefore, the inferences of the current study may serve as baseline information for devising techniques and ways for inducing

elevated levels of pro social behaviors and hence, better mental health.

## **MATERIAL AND METHODS**

This study was cross sectional study conducted at International Islamic University, Islamabad from June to September 2018. Participants of the present study included the traumatized and non-traumatized adolescents (N=600). Traumatized adolescents were selected from different schools of most vulnerable areas of Karachi (n=100), Peshawar (n=100) and Quetta (n=100). The individuals included in this sample were from sensitive areas where they had witnessed kidnapping of individuals and murders (through target killing, bomb blasts or any other terrorists' act and have seen bullet riddled bodies of their immediate family members) i.e., they were made the victims of man-made disasters. Similarly non-traumatized adolescents (who had not directly witnessed trauma) were selected from boarding schools of abbotabad (n=100), Rawalpindi and Islamabad (n=100), Sargodha and Lower Topa (n=100). The study was based on correlational research design and purposive sampling technique was used to collect the information from the participants. Both male (n=391) and female (n=209) students were included in the sample and age range of students was from 12 to 18 years. Before conducting this study, the ethical approval was obtained from the Ethical Review Board, Department of Psychology, International Islamic University Islamabad, along with individual approval from each head of the institutes. Before data collection from the participants the informed consent from each participant was obtained along with ensuring privacy and confidentiality.

### **Instruments**

Translation of the scales into Urdu was accomplished for this study in four steps: 1) Translation, 2) committee approach, 3) back translation, and 4) committee approach.

### **UCLA PTSD reaction index for Dsm-V**

The scale UCLA PTSD reaction index for DSM-V was applied in the present research. The

scale was developed by Pynoos, and Steinberg<sup>9</sup>. The scale is consisted of 31 items and it is Likert type scale. In this scale there are 27 items to assess PTSD symptoms and 4 additional items to assess dissociative subtype. The scale has

raw scores indicate more positive attitudes about the future overall.

**The Prosocial Personality Battery**

The 56-item version of prosocial personality battery by penner<sup>11</sup> was used to measure

**Table-I: Model coefficients for the conditional process model for PTSD and delinquency, future orientation and Pro-social behavior as an outcome.**

Predictors	PTSD			Delinquency		
	Coeff.	SE	p	Coeff.	SE	p
Trauma Exposure	36.64	15.16	0.01	28.35	9.09	0.00
PTSD	-	-	-	0.91	0.02	0.00
Social Support	-0.018	0.25	0.94	0.04	0.14	0.74
Trauma Exposure PTSD	-	-	-	33.34	14.16	0.00
Trauma Exposure × Social Support	0.13	0.25	0.55	-1.16	0.15	0.00
Constant	20.73	15.11	0.17	3.84	9.03	0.67
	R2 = 0.70 F(596, 3) = 480.94			R2 = 0.91 F(595, 4) = 1515.91		
	PTSD			Future Orientation		
	Coeff.	SE	p	Coeff.	SE	p
Trauma Exposure	36.64	15.16	0.01	21.07	6.61	0.00
PTSD	-	-	-	-0.19	0.01	0.00
Social Support	-0.01	0.25	0.94	0.07	0.10	0.47
Trauma Exposure → PTSD	-	-	-	31.52	11.30	0.00
Trauma Exposure × Social Support	0.13	0.25	0.55	-0.78	0.00	0.47
Constant	20.73	15.11	0.17	67.66	6.57	0.00
	R2 = 0.70 F(596, 3) = 480.94			R2 = 0.85 F(595, 4) = 879.41		
	PTSD			Pro-sociality		
	Coeff.	SE	p	Coeff.	SE	p
Trauma Exposure	96.64	15.16	0.01	-92.34	22.80	0.00
PTSD	-	-	-	-1.95	0.06	0.00
Social Support	-0.01	0.25	0.94	-0.40	0.37	0.27
Trauma Exposure → PTSD				188.44	17.23	0.00
Trauma Exposure × Social Support	0.13	0.25	0.55	2.90	0.37	0.00
Constant	20.73	15.11	0.17	306.81	22.65	0.00
	R2 = 0.70 F(596, 3) = 480.94			R2 = 0.89 F(595, 4) = 1281.50		

established psychometric properties.

**Children’s future orientation scale**

The CFOS is a self-report inventory devised to assess the attitudes of children and adolescents as they relate to three specific domains and a general domain developed by Saigh<sup>10</sup>. These domains are labeled “Work”, “Family”, “Social”, and “Omnibus,” respectively. Higher Total CFOS

prosociality in this study. The coefficient alphas of the individual scales ranges from 64 to 77.

**Multidimensional scale of perceived social support**

The multidimensional scale of perceived social support by Zimet, Dahlem, Zimet and Farley<sup>12</sup> was used in the current research. The scale consisted of 12 items and three subscales

including family, friends and significant others support.

### Self-reported delinquency scale

Self-reported delinquency scale by Naqvi and Kamal<sup>13</sup> was used for present study. This scale measures self-reported delinquency on theft, drug abuse, lying, noncompliance, police encounter, cheating, gambling, violence and sex related delinquency. The reliability of the scale is reported to be 79.

### Statistical Analysis

Data was analyzed by using SPSS version 23 for windows along with the process Macros by Hayes<sup>14</sup>. Descriptive statistics were used for exploring sociodemographic characteristics. An independent sample t-test was used to examine the mean difference between groups (traumatized and non-traumatized/male and female) in terms of study major variables. Further on, moderated mediation analysis was conducted using Process macro by testing model 8 as it was appropriate model for current study<sup>14</sup>.

## RESULTS

Out of total 600 participants with equal distribution of traumatized adolescents (n=300) and non-traumatized adolescents (n=300) most of them were males (65%) and were from middle adolescence (15 and 16 years old) age range (53%). The table-I indicates that the interaction effect of trauma exposure and social support is non-significant (as  $p>0.05$ ) for the regression coefficient of trauma exposure  $\times$  social support on PTSD, however, the interaction effect trauma exposure and social support has significant effect on delinquency as ( $p<0.001$ ). Table-II depicts the conditional direct and indirect effects. It represents the values of regression coefficients for direct (effect of trauma exposure on delinquency) and indirect effect (effect of trauma exposure on delinquency via PTSD) at mean and  $\pm 1$  SD values of social support. Data represents that as values of social support goes up the coefficient and strength of indirect coefficient also goes up but it is non-significant as bootstrap confidence intervals overlap each other. However, for direct

effects our findings suggest that as values of social support goes up the strength of relationship between trauma exposure and delinquency drops down significantly ( $p<0.001$ ). It reflects that social support significantly moderate the direct effect but doesn't moderate the indirect effect significantly. Similarly table-I indicates that the interaction effect of trauma exposure and social support has non-significant (as  $p>0.05$ ) on PTSD but it has significant effect on future orientation (as  $p<0.001$ ). Table-II depicts the conditional direct and indirect effects. It represents the values of regression coefficients for direct and indirect effect at mean and  $\pm 1$  values of social support. Data represents that as values of social support goes up the coefficient and strength of indirect coefficient also goes up but it is non-significant as bootstrap confidence intervals overlap each other. However, for direct effects our findings suggest that as values of social support goes up the strength of relationship between trauma exposure and future orientation drops down significantly ( $p<0.001$ ). It reflects that social support significantly moderate the direct effect but unlike direct effect it doesn't significantly moderate the indirect effect. Furthermore table-I indicates that the interaction effect of trauma exposure and social support is non-significant (as  $p>0.05$ ) for the regression coefficient of trauma exposure  $\times$  social support on PTSD, however, the interaction effect of trauma exposure and social support has significant effect on pro-sociality as ( $p<0.001$ ). Table-II depicts the conditional direct and indirect effects. It represents the values of regression coefficients for direct and indirect effect at mean and  $\pm 1$  values of social support. Data represents that as values of social support goes up the coefficient and strength of indirect coefficient also goes up and this time it came out to be significant as bootstrap confidence intervals don't overlap each other. Similarly, for direct effects our findings suggest that as values of social support goes up the strength of relationship between trauma exposure and pro-sociality drops down significantly ( $p<0.001$ ). It reflects that social support significantly moderate

the direct effect and indirect effects. In other words, the intensity of direct and indirect effect is contingent upon social support. Further the results showed that traumatized adolescents are higher on PTSD and delinquency whereas are lower on social support, future orientation and

prosociality and PTSD whereas males are higher on future orientation and delinquency.

**DISCUSSION**

To the best of our knowledge the current study is the first one to test the indirect effect of social support as a moderator and PTSD as

**Table-II: Model coefficients (Direct and Indirect) for the conditional process model for delinquency, future orientation and pro-social behavior as an outcome.**

Delinquency					
Social Support	Indirect Effect		Direct Effect		
	Coeff.	95 % Bias-Corrected Bootstrap CI	Coeff.	SE	p-value
22.65 (-1 SD)	36.31	29.37 to 44.58	1.96	5.74	0.73
45.24 (M)	39.18	32.22 to 45.81	-24.34	2.58	0.00
66.00 (+1 SD)	41.81	33.72 to 50.40	-48.51	1.70	0.00
Future Orientation					
22.65 (-1 SD)	-7.68	-12.04 to -4.29	3.23	4.17	0.43
45.24 (M)	-8.29	-12.06 to -4.68	-14.54	-7.74	0.00
66.00 (+1 SD)	-8.85	-12.51 to -5.06	-30.88	1.23	0.00
Pro-social Behavior					
22.65 (-1 SD)	-77.77	-94.69 to -61.86	-26.49	14.40	0.06
45.24 (M)	-83.91	-99.08 to -69.29	39.13	6.47	0.00
66.00 (+1 SD)	-89.55	-107.68 to -72.85	99.45	4.27	0.00

**Table-III: Difference between Non-traumatized (n=300) and Traumatized (n=300) adolescence and between Males (n=391) and Females (n=209) in terms of major variables of study.**

Trauma Category										
Scales	Non-trauma n=300		Trauma n=300		t	Df	p	95% CI		Cohen's d
	M	SD	M	SD				LL	UL	
SRDS	24.6	4.72	60.1	30.6	-19.7	598	0.00	-38.9	-31.9	1.62
PSB	243	7.92	156	69.2	21.5	598	0.00	79.0	94.8	1.76
FO	68.5	2.67	52.7	20.0	13.4	598	0.00	13.4	18.0	1.10
SS	60.2	3.09	31.6	23.9	20.4	598	0.00	25.8	31.3	1.67
PTSD	19.6	4.33	69.1	4.04	-137	598	0.00	-50.2	-48.7	11.8
Gender										
Scales	Males n= 391		Femalesn= 209		t	Df	p	95% CI		Cohen's d
	M	SD	M	SD				LL	UL	
SRDS	47.7	29.7	23.9	4.6	11.4	598	0.00	19.7	27.8	1.11
PSB	188.2	69.5	242.5	8.0	-11.2	598	0.00	-63.7	-44.7	1.09
FO	68.6	2.5	49.6	20.5	17.9	598	0.00	16.8	20.9	1.30
SS	37.0	24.2	60.4	2.9	-13.8	598	0.00	-26.6	-20.0	1.35
PTSD	38.6	24.2	43.4	25.4	-2.2	598	0.00	-8.89	-0.59	0.19

Note. SRDS=Self Report Delinquency Scale, PSB=Prosocial Personality Battery, FO= Future Orientation, SS= Social Support; PTSD = Post-traumatic Stress Disorder

prosociality than non-traumatized adolescents. In addition table-III shows values of t-test for comparison of rates of delinquency, prosociality, future orientation, social support and PTSD among male and female adolescents. The results indicate that females are higher on social support,

a mediator between trauma exposure as a predictor and future orientation, prosociality and delinquency as outcome variables. The current study indicated a significant positive association between PTSD and delinquency, future orientation prosociality, which shows the consistency



with the findings, reported in previous jurisdictions<sup>15,16</sup>. Further the results indicated that social support significantly moderates the relationship between trauma exposure and delinquency but it doesn't significantly moderate the relationship between trauma exposure and PTSD. The conditional direct and indirect effects reflects that social support significantly moderate the direct effect but doesn't significantly moderate the indirect effect. Similarly our data suggests that social support is not a significant moderator of the relationship between trauma exposure and PTSD but it significantly moderate the effect of trauma exposure on future orientation. The conditional direct and indirect effects reflects that social support significantly moderate the direct effect but doesn't significantly moderate the indirect effect. Further the findings also depicted that social support significantly moderates the relationship between trauma exposure and prosociality but it doesn't significantly moderate the relationship between trauma exposure and PTSD. The conditional direct and indirect effects reflects that social support significantly moderate the direct effect and indirect effects. In other words, the intensity of direct and indirect effect is contingent upon social support. In fact, meta-analytic findings indicate that poor social support is one of the strongest predictors of development of PTSD. For example, in the National vietnam veterans readjustment study, King and colleagues found that low level of perceived post-deployment social support was a strong mediator of risk for PTSD. Vietnam veterans with high social support were shown to be 180% less likely to develop PTSD compared with Vietnam veterans with low social support. Further, among treatment-seeking Vietnam veterans, homecoming stress (i.e., negative interpersonal interactions and social withdrawal) was a stronger predictor of current PTSD symptomatology than level of combat exposure, stressful life events, or childhood and civilian traumas<sup>17</sup>. In a study it was indicated that those who reported high levels of social support were much less likely to develop PTSD and depression than those with low levels

of social support. Studies revealed that trauma directly affects mental functioning, including heightened reaction to threatening situations, impairments in memory and attention, increases in both the risk of depression, and the likelihood of social problems among youth, such as substance abuse, risk taking, and dropping out of school<sup>18</sup>. Past research has shown that, "even when stress is toxic, supportive parenting, positive peer relationships, and the availability and use of community resources can foster positive adaptation"<sup>19</sup>. That is, youth can learn to demonstrate resilience and to thrive when supported by trusted and caring adults who provide opportunities for productive decision-making and constructive engagement in various social contexts; and promote the development of self-regulation, self-confidence and character<sup>20</sup>. The current study also validated some of the findings in this culture which are reported in previous jurisdictions regarding gender difference in terms of social support, prosociality, PTSD future orientation and delinquency. The results indicate that females are higher on social support, prosociality and PTSD whereas males are higher on future orientation and delinquency. Previous studies reported that females exposed to the horrors of the Rwandan genocide developed PTSD at greater rates than males (60% versus 27%, respectively)<sup>21</sup>. Similarly the results also showed that traumatized adolescents are higher on PTSD and delinquency whereas were lower on social support, future orientation and prosociality than non-traumatized adolescents. A study showed that the incidence of post-traumatic stress was as high as 87%<sup>22</sup>. All of these studies found a high incidence of PTSD in children exposed to situations of war and conflict. The study has few limitations as well. As for instance it is based on self-reports by students that could have generated a response bias. The measures used in current research should be validated by using a larger sample.

## CONCLUSION

The idea behind conducting the present research was to study in detail the relationship

of experiencing trauma in the most delicate developmental phase (adolescence) and to observe its further impact on their personality traits. The findings indicated the significant association of PTSD with delinquency, pro-sociality and future orientation along with mediating role of PTSD between the predictor traumatic exposure and outcomes includes future orientation, prosociality and delinquency in addition to the moderating role of social support. This study indicates the urge for the timely management of the outcomes as a consequence of exposure to traumatic events.

### CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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