

THE PREVALENCE OF POST TRAUMATIC GROWTH AMONG TROOPS IN POST DEPLOYMENT PHASE

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ABSTRACT

Objective: To determine the prevalence of post-traumatic growth (PTG) and its association with socio demographic factors among a cohort of troops in post deployment phase.

Study Design: Descriptive cross sectional.

Place and Duration of Study: A Military battalion in Lahore from Jan-April 2015, one year after deployment in the combat area.

Material and Methods: A sample of 296 combat troops was selected using non-probability convenient sampling technique. After taking informed written consent the data was collected using Urdu version of psychometric tool Post Traumatic Growth Inventory (PTGI). Data was entered and analyzed SPSS version 20.

Results: The mean age of the respondents was 29 ± 6.2 years. Married and unmarried were 214 (72.3%) and 82 (27.7%) respectively. The mean years of service of the troops were 11. In our study the majority of troops 279(94.3%) exhibited greater degree of positive growth (≥ 75), 15 (5.1%) had moderate degree of positive growth (74-51) while only 2 (0.7%) had no post traumatic growth (≤ 50). There was a significant negative correlation of PTG with the age ($p < 0.01$) and a significant association of Ethnicity with PTG ($p=0.03$). However there was no significant association of PTG with marital status ($p= 0.06$), education ($p=0.52$), income ($p=0.71$), rank ($p= 0.96$) and years of service ($p= 0.49$) at 95% confidence level.

Conclusion: It was concluded that there was a high prevalence of resilience as PTG in majority of troops one year after deployment in a combat area.

Keywords: Growth, Post Deployment, Post traumatic.

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INTRODUCTION

The WHO defines health as "A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"¹. A mentally healthy person copes with the normal stresses of everyday life. People vary dramatically in their susceptibility for developing medical illnesses, including psychiatric ones². In a society certain individuals are placed at a significantly higher risk than others of experiencing mental health problems depending upon the social context. Among others these vulnerable groups are people exposed to conflict and combat².

Pakistan is a frontline state in the global war against terror that has exposed the army to military combat in the tribal areas for more than

a decade. The economic, social, and human cost of the war on terror has and will continue to have an impact on the Pakistan for decades to come. Pakistan as a nation has exhibited resilience in the global war against terrorism, sacrificing much more than any other country in the world. The troops engaged in close combat are exposed to continuous stress. Stress can create an environment of continual anxiety and discontentment in an already hostile war zone³. Research on adult post combat reactions to potentially traumatic events has focused mostly on posttraumatic stress disorder^{4,5}.

However post-traumatic stress is not the only outcome. Combat trauma and stress does not automatically lead to disorder it can lead to growth and resilience a phenomenon of post traumatic growth^{6,7}. The resilience in the form of posttraumatic growth is the positive change that can occur individually within a person due to experiencing a traumatic event. Literature

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indicates a strong association between exposure to combat and the development of PTG⁷. Research has proved that the returned combat war veterans can utilize trauma encountered while serving in the military and turn the combat experiences into powerful, positive growth⁸. Posttraumatic growth is defined as the positive psychological change reported by an individual as result of exposure to a traumatic event⁷. The researchers proposed that growth is experienced in five domains including changes in self-perception, improved interpersonal relationships, recognition of new goals in life, a greater appreciation of life and modification in one's philosophy of life⁹.

Current literature on western samples has shown that 20-80% of troops report some positive changes following combat trauma^{7, 10}. Several studies have found that reports of positive psychological outcomes after combat among troops^{11,12}. Using data from the National Vietnam Veterans Readjustment Study Dohrenwend et al¹³ concluded that 70.1% of male veterans regarded their experience in Vietnam as mainly positive. Maguen et al¹⁰ also found frequent reports of PTG among veterans of the Persian Gulf War while still in the combat zone. Israeli researchers also reported PTG even in prisoners of war (POWs) subjected to torture¹². There is a scarcity of professional literature on the mental health sequelae of global war on terror in Pakistan especially in the context of terrorism and war^{14,15}. In a study conducted on the survivors of a terrorist attack, researchers found that despite the high mortality and morbidity due to the attack 57% survivors (n=30) had high PTG scores¹⁵. The purpose of this study is to survey troops to determine occurrence of positive growth exposed to combat in this unique subgroup. It is a study that has never been conducted before in Pakistan and could be expanded upon to a longitudinal study. The present study is of particular significance in the current climate of the ongoing war on terror.

MATERIAL AND METHODS

A descriptive cross sectional study was conducted in a Military combat battalion in

Lahore one year on post deployment from Jan-May 2015 after permission from the relevant authority. Non-probability convenient sampling technique was used to select a sample of 296 using WHO sample size calculator with the Post traumatic growth prevalence rate of 26% at 95 % confidence level at 5% margin of error. Participants were selected on the basis of their presence in the unit when deployed in the combat area. The troops who were unwilling to participate were excluded from the study and also if they had any previous history of a known documented psychiatric condition such as Psychosis, Affective disorders (Bipolar Disorder, Anxiety) and organic brain syndrome. The data collection tool used was the Urdu version of psychometric tool Post Traumatic Growth Inventory (PTGI). The internal reliability, assessed by the Cronbach's Alpha for the scale in this study was 0.82, while for the cluster of Openness to New Possibilities it was 0.89, for Relating to Others it was 0.85, for Personal Strength, Spiritual Change, and Appreciation of Life it was 0.86, 0.78, 0.75 respectively. The score on the PTGI were compiled. A resilience score on PTGI Scale designated 'No Growth' was set at < 50, 'Moderate Growth' at 51-74 and 'Greater Growth' at ≥75. Informed written consent was taken from the participants. The researcher and the officers of the battalion assembled the soldiers near their workplaces in the battalion at convenient times for the purpose of collection of data after approval of ethical committee at the Army Medical College.

Analysis included descriptive statistics of sociodemographic variables such as marital status, educational level ethnicity and income expressed as frequency and percentage. The association between PTG and the demographic variables such as education, marital status, ethnicity, service and rank were analyzed using the non-parametric chi-square test of significance with a 95% confidence level. The correlation between age and PTG score was analyzed by Pearson's Correlation. Statistical significance was set at $p < .05$. Data was entered and analyzed using Statistical package SPSS version 20.

RESULTS

The mean age of the respondents was 29 ± 6.2 years. There were 226 (76.4%) respondents who were matriculate while 67 (22.6%) were having FA/FSc qualification whereas only 3(1%) were graduates. Married and unmarried were 214 (72.3%) and 82 (27.7%) respectively .Punjabi were the predominant ethnic group 98(33.3%), especially among soldiers. Pathan, was the next category of ethnicity 67 (22.6%) followed by Sindhi 52(17.5%) and Balochi 29 (9.7%) respectively. The remaining soldiers 50 (16.8%) were from other ethnicities such as Kashmiris, Hazara and Gilgit and were all grouped as one. The mean years of service of the troops were 10.9 ± 6.1 years (R=1-27). The sample was representative of all ranks as far as the troops were concerned. There were 159 (53.7%) Sepoys in the sample, 29(9.8%) Lance Naiks, and 42 (14.2%) Naiks in the group .There were 11(3.7%) Lance Havalddars and 46 (15.5%) Havalddars in the sample .As far as the senior ranks in the troops are concerned there were 5 (1.7%) Naib Subedars and 4 (1.4%) Subedars. Details are shown in table-1.

In our study an over whelming majority of

degree of positive growth (51-74) while only 2 (0.7%) had no post traumatic growth (≤50) after deployment in a combat area as shown in figure-1. The mean PTGI score in our study was

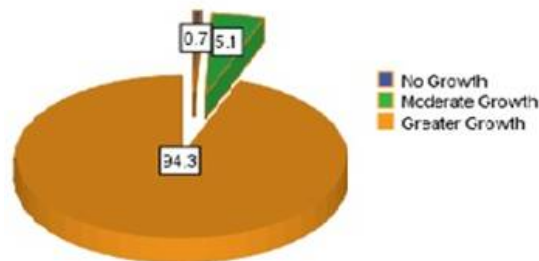


Figure-1: Frequency of PTG in combat troops (n=296).

83.3 + 25. In the current study, troops reported the highest levels of PTG within the PTGI subscales of factors of Spiritual Change (86%) followed by Personal strength (82%) and Relating to others (83%). Of note was that the minimum level of growth was observed for the factors was Appreciation of Life (71%) followed by new possibilities (73%).

PTGI scores in the troops showed significant negative Correlation with the age (r=-0.5 p<0.01). There was also significant

Table-1: Sociodemographic characteristics of combat troops (n=296).

Variables	Groups	Frequency (%)
Mean Age ± SD (R)	29.8 + 6.2 years (18-46)	
Age Groups	20-29 years	148(50%)
	30-39 Years	119(40.2%)
	40-49 years	29(9.8%)
Education Status	Graduates	3(1%)
	FSc/FA	67(22.6%)
	Matriculate	226(76.4%)
Marital status	Married	214 (72.3%)
	Unmarried	82 (27.7%)
Ethnic groups	Punjabi	98 (33.1%)
	Pathan	67 (22.6%)
	Sindhi	52 (17.6%)
	Balochi	29 (9.8%)
	Others	50 (16.9%)
Monthly income (Rs)	10000-20000	149(50.3%)
	21000-30000	121 (40.9%)
	31000-40000	23 (7.8%)
	41000-50000	3 (1%)

troops 279 (94.3%) exhibited greater degree of positive growth (>75) ,15 (5.1%) had moderate

association between PTG and ethnicity (p=0.03) at 95% confidence level .Balochi the least

dominant ethnic group in the sample displayed the maximum degree of growth (100%) followed by Punjabi (96%), Pathan (94%) and Sindhi (84.6%) respectively. There was no association of PTG with marital status ($p=0.06$), education ($p=0.52$), rank ($p=0.96$) and years of service ($p= 0.49$) as shown in table-2.

DISCUSSION

The main aim of the current study was to evaluate the positive psychological impact of the conflict in tribal area on this cohort of troops one year post deployment. The most prominent finding of our study that points to a constructive outcome of combat trauma is that the majority of combat troops (94.6%) in post deployment period exhibited greater degree of

growth by contrast only a small percentage (0.7%) of the sample scored in the no resilience category. This prevalence rate is far more than the western sample of 72.1% found in the National Vietnam Veterans Readjustment Study (NVVRS)¹³ and even more than Asian context in the sample reported for combat troops in Israel¹². Nonetheless, this study reports a substantially higher prevalence than levels reported in other international literature^{2,10,16,17}.

The higher degree of growth in this sample is due to the fact that participation in the military combat can be an important developmental milestone that leads to growth. This fits the assertion of Solomon and Dekel in their 2007 study of the combat troops of the

Table-2: Association of Sociodemographic and Military characteristics of Combat troops with PTG (n=296).

Variables	Greater growth	Mod growth	No growth	p value
Education Status				
Matriculate	210 (92. %)	14 (6.1%)	2(0.8%)	0.52
FSc/FA	66 (98%)	1(1.4%)	0	
Graduates	3 (100%)	0	0	
Marital Stat				
Unmarried	77 (94%)	3 (3.6%)	2 (2.4%)	0.06
Married	202 (94%)	12 (5.6%)	0	
Ethnic Grou				
Punjabi	94 (96%)	4 (4%)	0	0.03*
Pathan	63 (94 %)	4 (6%)	0	
Sindhi	44 (84.6%)	6 (11.5%)	2 (4.3%)	
Balochi	29 (100%)	0	0	
Others	49 (98%)	1 (2%)	0	
Monthly income (Rs)				
10000-20000	138 (92.7%)	9 (6%)	2 (1.3%)	0.71
21000-30000	115 (95%)	6 (5%)	0	
31000-40000	23 (100%)	0	0	
41000-50000	3 (100%)	0	0	
Service (Years)				
< 10	139 (92.6 %)	9 (6 %)	2 (1.3%)	0.49
11-20	119 (95.2 %)	6 (4.8 %)	0	
21-30	21 (100%)	0	0	
Rank				
Sep	142 (89%)	15 (9.4%)	2 (1.5%)	0.92
Lance Naik	28 (90%)	1 (10%)	0	
Naik	41 (90%)	1 (10%)	0	
Lance Havaldar	10 (90%)	1 (10%)	0	
Havaldar	43 (93.4)	3 (6.5%)	0	
Naib Subedar	5 (100%)	0	0	
Subedar	4 (100%)	0	0	

$p < .05$ (Chi-square)

Lebanon War, that resilience may be enhanced by the stimulus of combat exposure¹². In this sample growth may arise out of traumatic experiences during combat Veterans believed their war experiences boosted their self-discipline and assisted them to endure hardship better¹⁰.

High motivation to serve and strong ideological commitment to the goals of conflict have been strongly associated with PTG^{18,19} and may account for the high prevalence of PTG reported in this study. This cohort of combat troops possibly had a high motivation but participating in the conflict in the tribal areas was not a personal ideological choice rather a service requirement. In this study surprisingly the maximum level of PTG observed was in the factor of spiritual change this could be explained by the fact that in this sample of combat troops all respondents were Muslims and research indicates that religious coping strategies can also promote resilience after stressful events such as exposure to life threatening events²⁰⁻²².

There was a significant negative correlation between age and PTG score ($r = -.05$, $p < 0.01$) of the troops found in our study. This matches findings from other studies and may reflect one of the realities of combat related PTG and its association with younger age. Research indicates that servicemen in their mid-life than young age are more vulnerable to stress rather than growth¹².

One of the interesting results of our study was the association of PTG and ethnicity in this cohort of troops. This finding is in line with previous literature on the subject. In a study conducted on a US sample of troops a higher overall PTG score was evident among African Americans, Hispanics and Asian/Pacific Islanders in comparison to Caucasians². The reason behind this association is still obscure however most of these populations are not comparable to the current study population of predominantly young male Pakistani soldiers.

The main limitation was its cross-sectional design and the use of a self-report measure for PTG. Another limitation of our study symptoms is that the development of war related PTG

involves multiple factors such as pre and post deployment factors which were not investigated in our study. Finally we did control for the influence of possible psychiatric morbidities but it was not based on a psychiatric diagnosis. The results must therefore be generalized with extreme caution.

CONCLUSION

It was concluded that there is a high level of resilience in the form of post-traumatic growth in the troops after one year in post deployment phase. This may imply that the coping strategies used by this population may be effective in minimizing the psychological impact of combat exposure which needs to be investigated.

CONFLICT OF INTEREST

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

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