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THE IMPLICATIONS AND PSYCHOLOGICAL EFFECTS OF  
WAR FROM THE PERSPECTIVE OF ROMANIAN VETERANS

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**Abstract**

*This mixed-method study examined the complex interaction between post-traumatic stress disorder (PTSD), social relations, health conditions and the treatment history of Romanian war veterans. The aim of the survey was to provide an integrated understanding of these factors by using both quantitative analysis (N=93) of the survey data and in-depth qualitative interviews (N=4). Quantitative findings revealed a significant negative correlation between the severity of PTSD symptoms and social relation scores, suggesting that higher levels of post-traumatic stress are associated with increased social difficulties. However, generic quantitative predictors such as medical conditions and treatment history did not show significant predictive power in the statistical model. The qualitative component provided a key insight into these unpredictable findings, highlighting the highly individualised nature of trauma experiences, the specific type of support that was sought (often physical rather than psychological), and the crucial role of unmeasured factors such as active coping mechanisms, informal social support and participation in specialised programmes (such as Invictus). Qualitative analysis has also shown that the posttraumatic adjustment process is influenced by these various individual and contextual factors. The study underscores that while statistical associations provide a broad picture, qualitative insights are essential for understanding the clinical and contextual significance of veterans' experiences and the multifaceted factors influencing adaptation and barriers to care. This Mixed-Methods approach yields a more nuanced understanding than either method alone, emphasizing the need for tailored, holistic support systems that acknowledge the complexity of veterans' realities.*

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**Keywords:** PTSD, war veterans, social relationships, reintegration, Mixed-Methods

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## 1. INTRODUCTION

During military deployments, the primary focus of the staff is on operational tasks and security (see Hosek, Kavanagh & Miller, 2006). Meanwhile, their civilian counterparts often bear the full brunt of domestic responsibilities, including childcare and financial matters (Merolla, 2010; Wood, Scarville, & Gravino, 1995). Contrary to optimistic expectations about reunification, the post-departure period often presents considerable difficulties (see Sahlstein, Maguire, & Timmerman, 2009; Wiens & Boss, 2006). Some experts even argue that the process of returning

to civilian life may be more difficult than the initial adjustment to service (Huebner, Mancini, Wilcox, Grass & Blum, 2007; Mmari, Roche, Sudhinaraset & Grass, 2009). These barriers may contribute to an increase in the level of depression, anxiety and symptoms of post-traumatic stress disorder (PTSD) among soldiers and their spouses, together with an increase in marital conflicts in the first six months after return (Nelson *et al.* 2007; Renshaw, Rodrigues & Jones, 2008).

“*The Relational Turbulence Model*” by Solomon and Knobloch (2001) and Solomon and Knobloch (2004) provides a framework for understanding couples' experiences during transitional phases. Model characterizes these transitions as periods of disruption in interpersonal relationships, marked by significant shifts in how partners perceive and interact (Knobloch, 2007). During such times, even ordinary occurrences can take on amplified importance, profoundly impacting the relationship (Solomon, Weber, & Steuber, 2010). The challenges associated with reintegrating after deployment can be enduring and stressful (Orsillo *et al.*, 1998). More recent investigations reveal that veterans returning from operational deployments are at an increased risk for various mental health conditions, including PTSD (Basham, 2007), depression and anxiety (Morissette *et al.*, 2011; Wright *et al.*, 2012), alcohol and drug addictions (Jacobson *et al.*, 2008), and heightened suicidal ideation and mortality (Thoresen, & Mehlum, 2004).

The consequences of armed conflict extend beyond the people who are the victims and have a significant impact on their families and society at large (Mileti, Drabek, & Haas, 1975). In this context, social support, especially from the family, is an essential part of the healing process and can prevent the onset of PTSD (Bisson *et al.*, 2007; Chatters, & Taylor, 2005). However, PTSD, a common condition among war veterans, can have a negative impact on overall social functioning and has a significant impact on family dynamics and functioning. Family members can therefore be a source of support but can also face difficulties on their own because of the psychological problems of the veteran (Mužinić-Masle, & Vondraček, 2002).

Considering that most of the research on this topic originates from studies primarily involving North American populations, and acknowledging the distinct significance of local cultural, historical, and military factors, the current study employs a Mixed-Methods approach to examine the reintegration challenges specific to Romanian veterans. The study aims to identify the relevant psychological and socio-contextual mechanisms and investigate their associations with social functioning and current mental well-being. By adopting an exploratory design that combines qualitative interviews with statistical analysis, this research endeavours to illuminate the factors influencing the post-mission adaptation process within the Romanian context.

## 2. OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

This paper aimed to investigate the psychological implications and effects of exposure to war in Romanian veterans, with a particular focus on the difficulties in

reintegrating and socialising after the war. The aim of the study was to identify the psychological and social context mechanisms that underlie these difficulties and to examine their impact on veterans' well-being and social relations, with their families and friends. The study also considered the impact of related medical conditions, and the type of treatment received, if received.

## 2.2. HYPOTHESES

### **Hypotheses (Qualitative)**

1. PTSD symptomatology is associated with negative constructs that develop difficulties in establishing and maintaining significant social relationships among Romanian veterans.

2. Certain PTSD symptoms, such as avoidant behaviours, flashbacks, and sleep/concentration/eating disorders, are perceived by Romanian veterans as having a more pronounced negative impact on the quality of social interactions compared to other symptoms, such as hypervigilance or irritability.

3. Active coping mechanisms, such as emotional resonance or post-traumatic growth, are associated with better social adaptation and a reduced perception of the negative impact of PTSD symptoms on interpersonal relationships among Romanian veterans.

4. The presence and quality of support relationships (social and general) with family and friends after deployment play a significant role in the reintegration process of Romanian veterans and can mitigate the negative effects of PTSD on social relationships.

### **Hypotheses (Quantitative)**

1. SUM\_PTSD scores are significantly associated with medical status and therapy time.

2. SUM\_SAS-M scores are significantly associated with medical status and therapy duration.

3. There are no significant differences between the variances/distribution of scores across different groups.

4. Medical condition and therapy time groups significantly influence SUM\_SAS-M scores.

5. Medical condition and therapy time groups significantly influence SUM\_PTSD scores.

6. There is a significant negative relationship between SUM\_PTSD scores and SUM\_SAS-M scores (inversely proportional).

## 3. METHOD

### **Study Design**

The present study employed an exploratory sequential Mixed-Methods design, commencing with a qualitative phase and subsequently followed by a quantitative phase. This approach facilitated an exhaustive examination of the intricate phenomena through interviews and subsequent statistical analysis. This analysis

enabled the discernment of relationships and patterns, thereby offering both a comprehensive understanding and statistical flexibility.

### **Participants**

The study's sample population comprised of 93 Romanian war veterans. The qualitative phase of the study involved in-depth interviews with four male veterans (N=4). The quantitative phase of the study incorporated survey data from a total of 93 male veterans, with the initial four participants (N = 93) also included in the analysis. The participants involved in the qualitative phase were affiliated with the INVICTUS Romania organization, while the participants involved in the quantitative phase were both members and non-members of the organization. The age range of participants in the quantitative phase was not explicitly delineated as a selection criterion; however, it is described in the descriptive analysis (Table 1 in the original document shows age descriptive statistics for N=93).

### **Measures**

PTSD Checklist for DSM-5 (PCL-5) –to test PTSD level as SUM\_PTSD.

Social Adaptation Self-evaluation Scale –to test social functioning as SUM\_SAS-M

Medical Conditions: A categorical variable indicating the presence and type of medical conditions (0=None, 1=Disabilities, 2=Chronic Illnesses, 3=Both).

Therapy/Recovery History: An ordinal variable indicating the duration of therapy or recovery sessions (0=None, 1=Approximately 1 year, 2=Approximately 2 years, 3=3 years and more).

### **Data Collection**

A qualitative study was carried out using semi-structured interviews, which received approval from researchers in psychiatry and psychology. The purpose of these interviews was to explore various aspects of veterans' post-mission reintegration, including the psychological challenges faced, social relationships, coping strategies, access to healthcare services, and other pertinent issues. Additionally, a thorough collection of quantitative data was obtained through surveys administered both online and in print. These surveys included specified instruments and were distributed to the entire sample.

### **Data Analysis**

Thematic coding, memo-writing, and visual analysis techniques, including Code Relations Browser and Code Trends were used to identify common themes, relationships between constructs, and patterns within individual narratives.

Quantitative data were analysed using IBM SPSS Statistics (latest version 30). Preliminary analyses included descriptive statistics (means, standard deviations, skewness, kurtosis) and tests for normality (Shapiro-Wilk, Kolmogorov-Smirnov) and homogeneity of variances (Levene's test). Considering the observed deviations from parametric assumptions, non-parametric methods and robust procedures were employed. Spearman's rho correlation coefficient was utilised to evaluate the relationships between variables, with the bootstrapping method (5000 re-samples, BCa 95% CI) employed to ensure the robustness of the findings. Also, Hierarchical

linear regression<sup>1</sup>, employing bootstrapping (5000 re-samples, BCa 95% CI), was conducted to examine the predictive capacity of medical conditions and therapy history on SUM\_PTSD and SUM\_SAS-M scores. The relationship between SUM\_PTSD and SUM\_SAS-M scores was then examined using simple linear regression with bootstrapping (1000 re-samples, BCa 95% CI).

Triangularisation was employed to integrate the findings from both the qualitative and quantitative strands, thereby providing a more comprehensive and nuanced understanding of the research problem. This was achieved by validating the quantitative results through qualitative insights and explaining the quantitative non-findings through rich narrative data.

#### 4. RESULTS

##### **Qualitative Findings**

The following section presents the findings derived from the qualitative research. A qualitative analysis of interviews with four veterans revealed several key themes related to post-mission reintegration and psychological well-being. Thematic analysis revealed prominent themes, including the significant emotional resonance of operational experiences, the utilisation of various coping mechanisms and resilience strategies, and instances of post-traumatic growth. Veterans participated in a discussion on the challenges encountered during the process of social reintegration, with a particular focus on the dynamics of family and friendship relationships. Furthermore, participants identified barriers that impede access to adequate post-traumatic care. Several specific PTSD symptoms have been documented as having a significant impact on social interactions. These symptoms include avoidant behaviours (e.g. isolation), flashbacks and sleep/concentration disturbances as seen in Figure 1. A thorough analysis of the relationships between these variables revealed a multifaceted interplay between emotional resonance, barriers to care, reintegration difficulties, coping mechanisms, post-traumatic growth, and acceptance. It is noteworthy that active coping mechanisms, including engagement in sports (for example, through INVICTUS Romania) and hobbies, emerged as significant factors in managing negative emotional impacts and facilitating adaptation.

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<sup>1</sup> for additional research on the application of the bootstrap method to regression (and non-parametric data), see "**Some Bootstrap Methods for Regression and Time Series**", a PhD paper by Blandino from 2021.



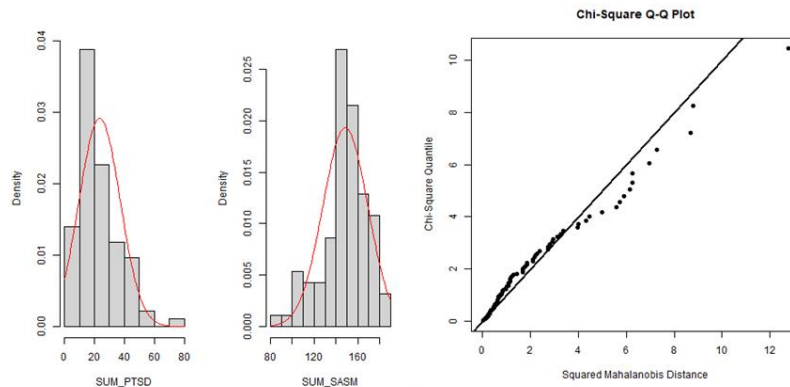


Figure 2. (Left) Univariate Normality Histogram. (Right) Q-Q Plot of SUM\_PTSD and SUM\_SAS-M

Furthermore, non-normality was observed within specific subgroups defined by medical conditions and therapy history. Levene's test indicated that the assumption of homogeneity of variances was met for SUM\_PTSD across groups based on medical conditions and therapy history, and for SUM\_SAS-M across medical condition groups. However, the homogeneity of variance was violated for SUM\_SAS-M across therapy history groups ( $p = .013/.049$ ). Spearman's rho correlation analysis, employing bootstrapping for enhanced robustness, revealed a significant negative correlation between SUM\_PTSD and SUM\_SAS-M scores ( $\rho = -.317$ ,  $p = .002$ , 95% BCa CI [-.494, -.121]), thereby providing support for Hypothesis 6. This finding suggests that individuals with higher PTSD scores are more likely to exhibit lower social adaptation scores. A significant positive correlation of small magnitude was found between SUM\_PTSD scores and medical conditions ( $\rho = .225$ ,  $p = .030$ , 95% BCa CI [.016, .418]), providing partial support for Hypothesis 1 in a correlational context. No significant correlations were identified between therapy/recovery history and SUM\_PTSD or SUM\_SAS-M.

Hierarchical linear regression analysis, employing bootstrapping, did not find statistically significant predictive capacity for medical conditions (Block 1) or therapy history (Block 2, after controlling for Block 1) on either SUM\_PTSD or SUM\_SAS-M scores in this sample. Block 1 variables explained 7.2% of the variance in SUM\_PTSD ( $R^2 = .072$ ) and 5.6% in SUM\_SAS-M ( $R^2 = .056$ ). Block 2 added an additional 3.8% to the variance in SUM\_PTSD and 4.3% in SUM\_SAS-M. Individual dummy variables within these blocks were not statistically significant predictors. Thus, Hypotheses 1 (predictive aspect), 2, 4, and 5 were not statistically supported in the regression models. However, simple linear regression with bootstrapping showed that SUM\_PTSD scores significantly predicted SUM\_SAS-M scores ( $B = -.514$ ,  $p = .002$  Bootstrap, 95% BCa CI [-.917, -.168]), explaining 11.6% of the variance in SUM\_SAS-M ( $R^2 = .116$ , Adjusted  $R^2 = .106$ ), further supporting Hypothesis 6 as seen in Table 2.

Tabel 2. Summary of Simple Linear Regression Predicting SUM\_SAS-M from SUM\_PTSD (N=93)

Variable	B	SE Bootstrap	p-value Bootstrap	95% BCa CI
SUM_PTSD	-0.514	0.166	0.002	[-0.917, -0.168]
(Constant)	42.471	6.264	<0.001	[30.245, 55.254]

### Triangularization

The integration of qualitative and quantitative results yielded a more nuanced interpretation. The strong negative correlation and predictive relationship between PTSD symptoms and social functioning (quantitative finding supporting Hypothesis 6) were richly illustrated by qualitative narratives describing avoidant behaviours and difficulties in social interactions due to trauma-related symptoms (supporting Qualitative Hypothesis 1, 2, and implicitly addressing aspects of Qualitative Hypothesis 3 regarding the prevalence of certain symptoms and Qualitative Hypothesis 4 regarding the need for support).

The quantitative finding that medical conditions and therapy history did not significantly predict PTSD or social functioning (rejecting Quantitative Hypotheses 1, 2, 4, 5) was illuminated by qualitative insights. Veterans' accounts have indicated that the "therapy" received was predominantly physical in nature, with a paucity of psychological interventions. Furthermore, the analysis of qualitative data highlighted the critical aspects of general quantitative research, including active coping mechanisms (e.g. sports, hobbies) and informal social support (e.g. family, Invictus community), as significant moderators of the impact of medical conditions and trauma. These mechanisms potentially serve to buffer the direct predictive effect of medical conditions and trauma in the statistical model, a conclusion that could not be reached solely through quantitative means. The qualitative themes and codes of coping, post-traumatic growth, and acceptance (Qualitative Hypothesis 3) provided a crucial context for understanding the variability in outcomes and the resilience observed despite significant challenges that could not be addressed by a quantitative study. Furthermore, implicit support was provided for Qualitative Hypothesis 4 regarding positive factors.

The findings of the present study, based on a Mixed-Methods approach, revealed that, while PTSD significantly impacts social relationships, the influence of medical conditions and therapy history is complex and likely mediated or moderated by many hidden factors, such as coping strategies and social support. These factors were more deeply explored in the qualitative phase and are more likely to be of a high-quality design.

## 5. CONCLUSIONS

These findings underscore the significant impact of PTSD on the social functioning of Romanian veterans, highlighting the need for targeted interventions to address trauma symptoms and support social reintegration. The study also reveals the complexity of factors influencing adaptation, emphasizing that while

medical history and therapy are relevant, their influence is intertwined with coping strategies and the quality of social support. The discrepancy between the perceived need for psychological support and the reported prevalence of primarily physical therapy highlights a critical area for improvement in veteran care services in Romania. The findings support the importance of programs promoting active coping and community engagement, such as INVICTUS.

Quantitatively, a significant negative association was found between PTSD symptom severity and social relationship scores (Hypothesis 6 supported), indicating that higher levels of post-traumatic stress are significantly linked to greater difficulties in social adaptation. A significant but small positive correlation was observed between PTSD scores and medical conditions (partial support for Hypothesis 1). However, medical conditions and therapy history did not emerge as statistically significant predictors of PTSD or social functioning in the regression models (Hypotheses 1, 2, 4, 5 not supported predictively), but as reference to something hidden.

Qualitative findings illuminated these statistical results, highlighting the highly individualized nature of trauma impact and reintegration. Key themes included the intense emotional resonance of experiences, the crucial role of active coping mechanisms (such as engagement in sports and hobbies) and informal social support (family, community), and the perceived barriers to accessing adequate psychological care (with therapy often being primarily physical). Qualitative data provided rich context for understanding how factors not fully measured in the quantitative model, like effective coping and strong social support, likely moderate the impact of medical conditions and trauma, helping to explain the lack of significant predictive effects for those variables. Qualitative analysis also supported the negative impact of specific PTSD symptoms (avoidance, flashbacks) on social interactions (Qualitative Hypotheses 1 & 2) and underscored the importance of positive coping strategies (Qualitative Hypothesis 3) and support relationships (Qualitative Hypothesis 4).

### **Limitations**

The present study is subject to certain limitations, including the relatively small sample size for the quantitative phase (N=93), which may have limited statistical power to detect small or moderate effects, also these limitations were addressed to a certain extent by the qualitative component. The qualitative sample size (N=4). However, even in this small sample, important insights have been gained.

### **Future directions**

It is recommended that future research employ larger, longitudinal samples to enhance statistical power and explore causal pathways in post-traumatic adaptation. The development and utilisation of more precise quantitative metrics for therapeutic modalities, coping strategies, and the quality of social support are recommended. Further qualitative and Mixed-Methods research is required to explore barriers to psychological care and to delve deeper into the processes of adaptation. It is conceivable that the utilisation of a Structural Equation Model

(SEM) could serve as a pioneering model in addressing the "quantifying" domain, particularly in the context of research endeavours focused on the identification of "hidden variables" in the realm of trauma. This model has the potential to encompass a wide range of applications, including the study of post-traumatic stress disorder (PTSD) in military personnel and individuals exposed to traumatic events.

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