

Volume 11, n 2, 2023

Articles

Investigating the association between post-traumatic stress symptoms and satisfaction with life: Avoidance is significantly related to life satisfaction with the moderation of Mature defense mechanisms

Alessio Gori^{1,2,*}, Eleonora Topino³, Alessandro Musetti⁴, Giulia Tulli², Giuseppe Craparo⁵, Marco Cacioppo³, Luigi Janiri^{6,7}

Abstract

Background: Among the various components of subjective well-being, satisfaction with life attracts considerable interest, and the research about the antecedents of this construct is a thriving field in the scientific literature. Therefore, the present study aimed at investigating the factor that may influence satisfaction with life, by specifically focusing on post-traumatic stress symptoms and mature defense mechanisms, controlling for gender and age as covariates.

Method: A sample of 703 Italian individuals (495 Women; 208 Men) with a mean age of 34.80 years (SD = 11.81) was involved in the research. They completed an online survey including the Satisfaction with Life Scale, Impact of Event Scale - Revised, and the Forty Item Defense Style Questionnaire, after they were briefed on the general aim of the study and provided informed consent. Data were analysed by performing Pearson's *r* partial analysis (controlling for gender and age) and implementing two moderation models.

Results: In the first moderation model, the total score of post-traumatic stress symptoms showed a significant and negative association with satisfaction with life, moderated by mature defenses. Such data was further investigated, exploring the role of intrusion, avoidance, and hyperarousal sub-dimensions. Results showed that avoidance was significantly and negatively related to satisfaction with life, with the moderation of mature defenses. Finally, age was found to interact with satisfaction with life, so younger subjects had lower levels of life satisfaction.

Conclusions: The present study highlighted the negative association between post-traumatic stress symptoms (and specifically, avoidance) and satisfaction with life, highlighting the protective role of mature defenses in this relationship. Such data may provide useful knowledge to implement tailored interventions.

¹ Department of Health Sciences, University of Florence, Florence; Italy

² Integrated Psychodynamic Psychotherapy Institute (IPPI), Florence, Italy

³ Department of Human Sciences, LUMSA University of Rome, Rome, Italy

⁴ Department of Humanities, Social Sciences and Cultural Industries, University of Parma, Parma, Italy

⁵ Faculty of Human and Social Sciences, UKE-Kore University of Enna, Enna, Italy

⁶ Department of Neurosciences, Fondazione Policlinico Universitario A. Gemelli, IRCCS, Rome, Italy

⁷ Psychiatry Unit, Università Cattolica del Sacro Cuore, 00168 Rome, Italy

E-mail corresponding author: alessio.gori@unifi.it

Keywords:

Life satisfaction; PTSD; impact of event; defense mechanisms; Clinical Psychology.

Received: 31 January 2023

Accepted: 26 July 2023

Published: 31 August 2023

Citation: Gori, A., Topino, E., Musetti, A., Tulli, G., Craparo, G., Cacioppo, M., Janiri, L. (2023). Investigating the association between post-traumatic stress symptoms and satisfaction with life: Avoidance is significantly related to life satisfaction with the moderation of Mature defense mechanisms. *Mediterranean Journal of Clinical Psychology* 11(2). <https://doi.org/10.13129/2282-1619/mjcp-3689>



1. Introduction

Satisfaction with life regards the general individual's evaluation concerning their quality of life, based on the perception of the achievement of one's goals and the satisfaction of one's desires (Diener et al., 1985, Pavot & Diener, 1993). It has been conceptualized as a key component of subjective well-being (Diener & Suh, 1999), and this theorization finds empirical confirmation in significant associations with physical and mental health (Trzebiński et al., 2020; Salovey et al., 2000). Indeed, satisfaction with life was positively associated with self-esteem (Morriss et al., 2019), resilience (Matud et al., 2014), positive affect (Busseri, 2018), and reduced mortality (Chida & Steptoe, 2008). On the other hand, lower levels of life satisfaction have been related to perceived stress (Gori et al., 2020a), burnout (Haar & Roche, 2010), sleep disorders (Mahamid et al., 2022), depression (Mahmoud et al., 2012), anxiety (Fergusson et al., 2015), and suicide ideation (Chang et al., 2019). Given this evidence, the study of the antecedents of life satisfaction gained considerable interest in the scientific research field (Lyons et al., 2013), as well as in clinical practice due to the salient applicative implications (American Psychiatric Association, 2022). Therefore, the present study aimed at exploring the factor that may influence satisfaction with life and how they interact with each other, by specifically focusing on post-traumatic stress symptoms and mature defense mechanisms.

The Diagnostic and Statistical Manual of Mental Disorders, 5th edition, text revision (DSM-5-TR; American Psychiatric Association, 2022) describes post-traumatic stress disorder (PTSD) as a problematic condition that can emerge after living potentially traumatic events which includes symptoms of intrusion, avoidance, negative alterations in cognition and mood, and hyperarousal persisting more than 1 month and causing clinically significant distress or impairment of social, occupational or other important areas of functioning. Higher levels of post-traumatic stress symptoms were associated with anxiety (Gori & Topino, 2021) depression (Copanitsanou et al., 2018), worry (Gori et al., 2023a), suicidal ideation (Jakupcak et al. 2011), hostility and anger problems (Jakupcak et al., 2007), alcohol misuse (Debell et al., 2014), physical symptoms (Pacella et al., 2013), lower levels of self-efficacy (Steger et al., 2015), as well as feelings of worthlessness and a lower perception of meaning in life (Fischer et al., 2020). Consistently, post-traumatic stress symptoms were related to lower subjective quality of life (Holowka & Marx, 2012) and lower perception of satisfaction with life (Morgan et al., 2017).

The concept of defense mechanism originated with Freud (1894) to describe unconscious mental processes that safeguard individuals from conflicting ideas and intolerable emotions stemming from them. Over the years, through extensive research and clinical practice, these

mechanisms have been explored in greater depth, opening the path to studying their varying degrees of adaptive functionality (Freud, 1915, 1926). More recently, the concept of the defense mechanism has been further expanded (Cooper, 1998), recognizing their role not only in regulating emotions but also in maintaining or re-establishing representations of self and others, which aid in fostering self-esteem and reducing distress. In light of these developments, one of the most widely accepted categorizations of defensive mechanisms classifies them as mature, neurotic, and immature, based on the level of reality distortion involved in their use (Cramer, 2006; Vaillant, 1992). Specifically, mature defenses moderate the individual's responses to stressful conditions without distorting reality, while allowing awareness of personal desires, fears, and emotional responses, thus optimizing adaptation (Vaillant, 2022). They were negatively associated with psychological symptomatology (Di Giuseppe et al., 2020a; Gori et al., 2021a), such as perceived stress (Gori et al., 2020a, Topino & Gori, 2023), anxiety (Gori et al., 2022a), and depression (Carvalho et al., 2013), and alexithymia (Di Giuseppe & Conversano, 2022), to name a few. In parallel, previous evidence has shown that individuals with a more adaptive defensive functioning linked to greater use of mature defenses present a greater sense of personal fulfilment and emotional exhaustion (Di Trani et al., 2022), subjective well-being, and life satisfaction (Lyke, 2016).

Given the aforementioned evidence, this research investigated the relationships between factors that may influence the levels of satisfaction with life, focusing on post-traumatic stress symptoms and mature defense mechanisms. Indeed, the effects of post-traumatic stress symptoms on mental health and well-being have currently been highlighted in the literature through the implementation of different types of designs (e.g., cross-sectional, Hassan et al., 2017; and longitudinal, Tanaka et al., 2022) and in several settings (e.g., face to face, Huang et al., 2022; and online, Grubbs & Chapman, 2019). However, studies about the peculiar association between post-traumatic stress symptoms and satisfaction with life, also considering specific symptoms (intrusion, avoidance, and hyperarousal) and without neglecting the investigation of possible protective factors, are still scarce.

Therefore, to achieve the proposed goal, a simple moderation model was tested in this research (see Figure 1, part A), hypothesizing that:

- H₁)** Post-traumatic stress symptoms will be negatively associated with satisfaction with life;
- H₂)** Mature defenses will moderate this relationship, such that for higher levels of mature defenses the negative effect of post-traumatic stress symptoms on satisfaction with life will weaken.

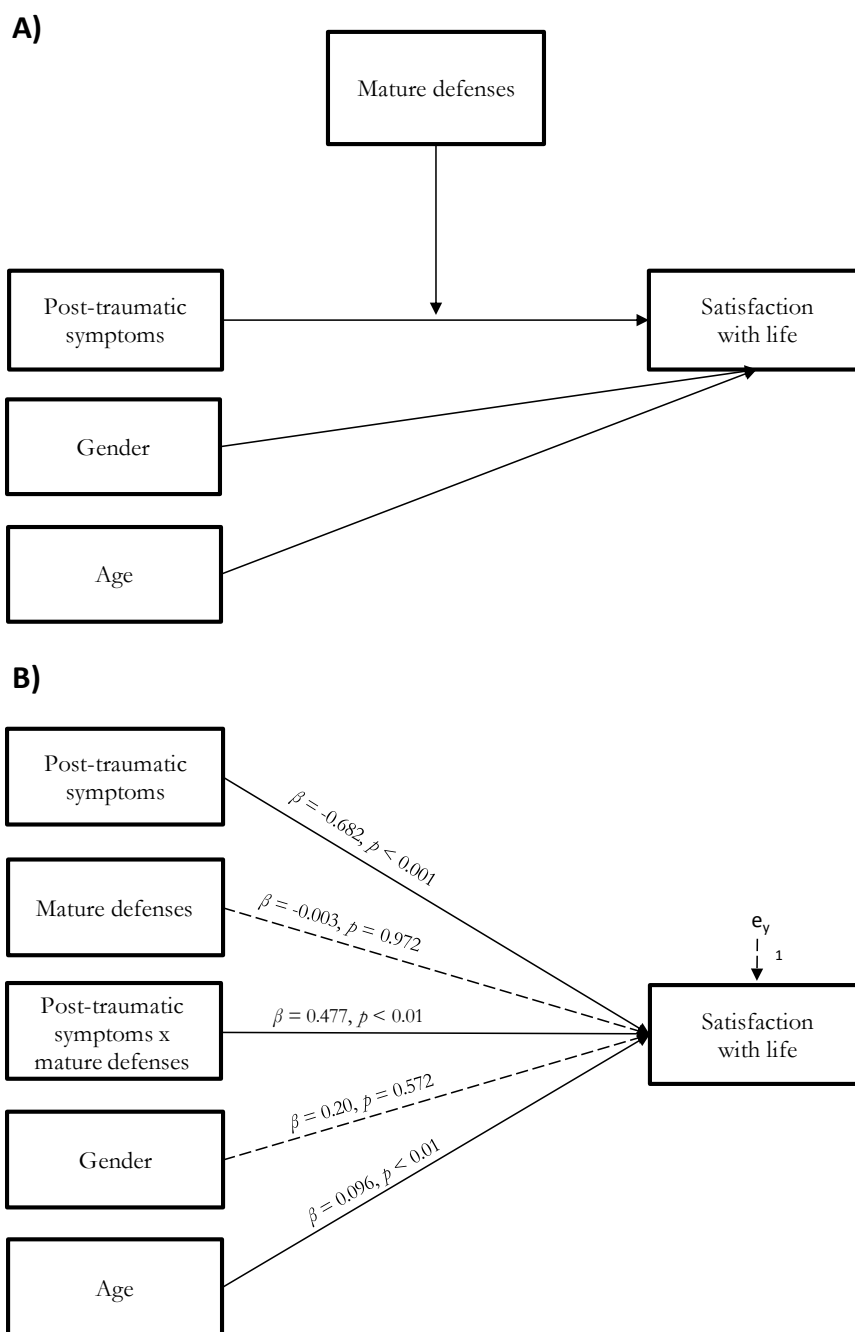


Figure 1. Conceptual (A) and statistical model (B) concerning the moderation of the mature defenses in the relationship between the total score of post-traumatic stress symptoms and satisfaction with life, controlling for gender and age.

Furthermore, since previous studies have shown that the variables of interest can be influenced by factors such as gender or age (Joshani & Jovanović, 2020; Zaragoza Scherman et al., 2020), these factors were controlled as covariates to test the solidity of the interactions hypothesized in the model.

Finally, the specific association of intrusion, avoidance, and hyperarousal with satisfaction with life was explored, further investigating the mediating role of mature defenses and controlling for gender and age.

2. Materials and Methods

2.1 Participants and Procedure

A sample of 703 Italian subjects (495 Women; 208 Men) was involved in the present research. Their age ranged from 18 to 69 years ($M = 34.80$; $SD = 11.81$). All participants were recruited on the Internet through a call for participants posted on various social media and completed an anonymous online survey hosted on the platform Google Forms, where they completed all the self-report measures after they were briefed on the general aim of the study and provided informed consent electronically. The study was approved by the first author's institutional Ethical Committee (Integrated Psychodynamic Psychotherapy Institute, IPPI; ethical approval number 001C/2021).

2.2 Measures

2.2.1 Satisfaction with Life Scale (SWLS)

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985; Italian version: Di Fabio & Gori, 2016, 2020) was used to assess satisfaction with life. It is a self-report scale and consists of 5 items scored on a seven-point Likert scale (from 1 = "Strongly disagree"; to 7 = "Strongly agree"). The one-dimensional structure of the scale was confirmed in its Italian version (Di Fabio & Gori, 2016, 2020), enabling the calculation of a total score ranging from 5 to 35. In the present sample, the Cronbach alpha of the scale was 0.90.

2.2.2 Impact of event scale – revised (IES-R)

The *Impact of event scale – revised* (IES-R; Weiss & Marmar, 1996; Italian version: Craparo et al., 2013) was used to assess post-traumatic stress symptoms based on the conceptualization of the DSM-IV ((American Psychiatric Association, 1994, 2000), which was revived and integrated into the fifth edition (American Psychiatric Association, 2013; American Psychiatric Association, 2022). The IES-R is a self-report scale and consists of 22 items scored on a five-point Likert scale (from 0 = "Not at all" to 4 = "Extremely"), which allows calculating scores for both the total and three sub-dimensions: Intrusion (8 items), Avoidance (8 items) e Hyperarousal (8 items). In the present sample, the Cronbach alpha was 0.92 for the total score, and 0.77, 0.88, and 0.81 for the subdimensions of intrusion, avoidance, and hyperarousal, respectively.

2.2.3 Forty Item Defense Style Questionnaire (DSQ – 40)

The *Forty Item Defense Style Questionnaire* (DSQ-40; Andrews et al., 1993; Farma & Cortinovic, 2000) was used to assess defense mechanisms. It is a self-report scale of 40 items scored on a nine-point Likert scale (from 1 = “Strongly disagree” to 9 = “Strongly agree”), which allows assessing three main styles: 1) the mature defense style (sublimation, humor, anticipation, and suppression); 2) the neurotic defense style (pseudo-altruism, idealization, and reaction formation); 3) the immature defense style (projection, acting out, isolation, devaluation, autistic fantasy, denial, passive aggressiveness, displacement, disassociation, splitting, rationalization, and somatization). In the present sample, the Cronbach alpha of the scale was 0.60 for the mature subscale, 0.61 for the neurotic subscale, and 0.83 for the immature subscale.

2.3 Analytic plan

The SPSS statistical software (v. 25.0, IBM, Armonk, NY, USA) was used to analyse the collected data. Controlling for gender (Men coded as 0 and Women coded as 1) and age, Pearson’s r partial analysis was performed to investigate possible correlations between traumatic satisfaction with life, defense styles (Mature, neurotic, and immature) and post-traumatic stress symptoms (both the total score and the three subscales). Then, the hypothesized model was tested by using the macro-program PROCESS 3.4 (Hayes, 2018): a moderation model (Model 1) was implemented, by investigating the moderation of mature defense mechanisms in the relationship between the total score of post-traumatic stress symptoms and satisfaction with life, controlling for Gender and Age as possible covariates. The conditional indirect effect was analysed following the Johnson-Neyman procedure (1936), by evaluating the conditional effects of post-traumatic stress symptoms at three levels of mature defense style, i.e., -1SD Mean, +1 SD. Then, an explorative follow-up multiple linear regression analysis was implemented to identify the post-traumatic stress symptoms (Intrusion, Avoidance, and Hyperarousal) associated with satisfaction with life, further investigating the moderation of mature defenses and controlling for Gender and Age as possible covariates. Multicollinearity was tested by examining Tolerance and Variable Inflation Factor (VIF): Tolerance values below 0.20 (Menard, 1995) and VIF above 5.0 (James et al., 2013) were considered indicators of multicollinearity issues. The 95% confidence interval (CI) was calculated for each regression coefficient included in the model. The bootstrap technique (5,000 bootstrapped samples with 95% CI) was also used to assess the statistical stability of the analyses.

3. Results

Controlling for age and gender, satisfaction with life was significantly and positively associated with mature defenses ($r = 0.19, p < 0.01$), while it showed significant and negative associations

with the total score of post-traumatic stress symptoms ($r = -0.26, p < 0.01$) and its subscales (see Table 1).

Table 1. Correlations between the variables, controlling for age and gender

	1	2	3	4	5	6	7	8
1. Satisfaction with life	1							
2. Mature defenses	0.190	1						
3. Neurotic defenses	-0.139	0.293	1					
4. Immature defenses	-0.283	0.288	0.568	1				
5. Post-traumatic stress symptoms (total)	-0.258	0.016	0.402	0.444	1			
6. Intrusion	-0.169	0.129	0.336	0.410	0.837	1		
7. Avoidance	-0.257	-0.027	0.378	0.389	0.933	0.640	1	
8. Hyperarousal	-0.266	-0.060	0.362	0.391	0.905	0.609	0.832	1

Note. Bold values indicate significant p -values. The significant correlations were all at the $p < 0.01$ level. Concerning the single moderation analysis, a negative effect in the relationship between post-traumatic stress symptoms on satisfaction with life ($\beta = -0.68, p < 0.001, LLCI = -0.3829$ – $ULCI = -0.1614$) was found (\mathbf{H}_1) and was significantly moderated by mature defense mechanisms ($\beta = 0.48, p < 0.01, LLCI = 0.0014$ – $ULCI = 0.0064$; \mathbf{H}_2), controlling for gender and age as potential confounders (see Figure 1 and Table 2). Specifically, while gender showed no significant influences in the model, age showed a significant and positive effect on satisfaction with life ($\beta = 0.97, p < 0.01, LLCI = 0.0152$ – $ULCI = 0.0953$).

Table 2. Coefficients of the moderation model involving post-traumatic stress symptoms (total score), mature defenses, and satisfaction with life, controlling for gender and age

Antecedent	Consequent					
	Y					
	B	SE	p	<i>Bootstrap 95% CI</i>		
X	b_1	-0.272	0.056	< 0.001	[-0.3710; -0.1488]	
W	b_2	-0.002	0.052	0.972	[-0.1011; 0.1052]	
M x W	b_3	0.004	0.001	< 0.01	[0.0010; 0.0062]	
C1	b_4	0.303	0.536	0.572	[-0.7113; 1.3827]	
C2	b_5	0.055	0.02	< 0.01	[0.0171; 0.0930]	
Constant	i_Y	230,840	25,296	< 0.001	[18.0037; 27.8203]	
$R^2 = 0.128$						
$F(5, 697) = 20.371, p < 0.001$						

X = Post-traumatic stress symptoms (total score); W = Mature defenses; Y = Satisfaction with life; C1 = Gender (coded as 0 = Men; 1 = Women); C2 = Age.

Furthermore, the conditional effect was tested by exploring the conditional effects of post-traumatic stress symptoms (total score) at three levels of mature defenses style (-1SD, Mean, +1SD). The negative association between post-traumatic stress symptoms (total score) and satisfaction with life was stronger at low levels of mature defenses (estimate = -0.14(0.02), $p < 0.001$; LLCI = -0.1766; ULCI = -0.1044), than at average (estimate = -0.10(0.01), $p < 0.001$; LLCI = -0.1318; ULCI = -0.0752) and high levels (estimate = -0.07(0.02), $p < 0.001$; LLCI = -0.1043; ULCI = -0.0287). Therefore, when participants reported higher levels of mature defenses, the negative effect of post-traumatic stress symptoms on satisfaction with life weakens (see Figure 2).

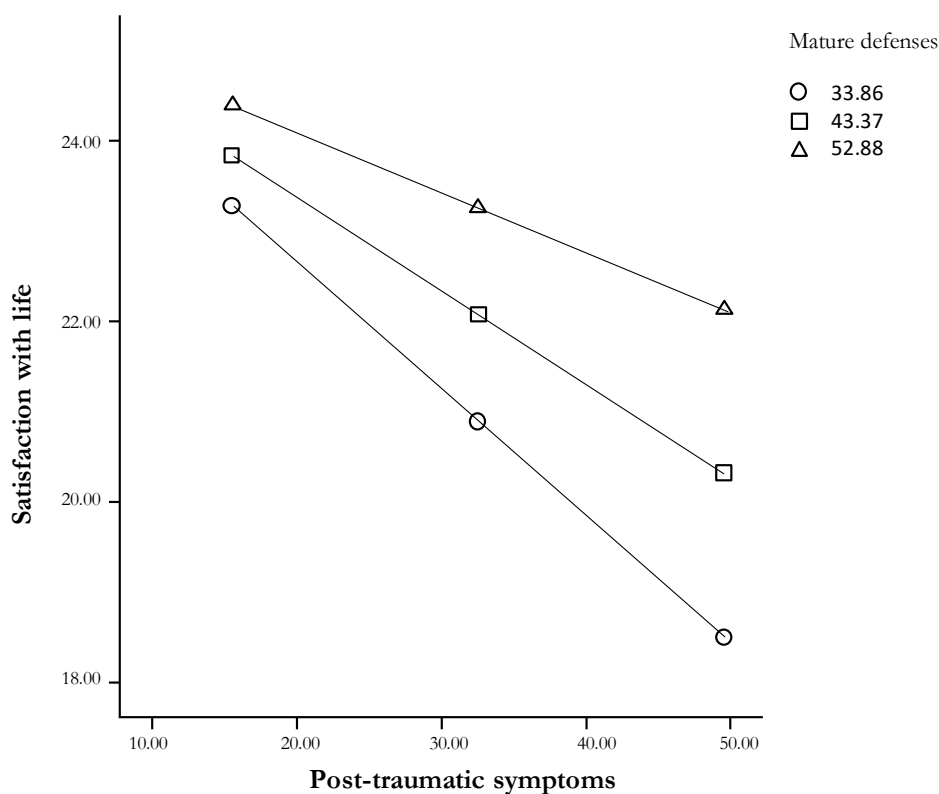


Figure 2. Graphical representation of the moderation effect

The multiple linear regression was used to predict satisfaction with life, based on the three post-traumatic stress symptoms factors (i.e., intrusion, avoidance, hyperarousal) with the moderation by mature defenses and controlling for age and gender. A regression equation explaining a significant amount of variance in satisfaction with life was found: $F(9,693)=12.122$, $p < 0.001$, $R^2 = 0.136$ (see Figure 3).

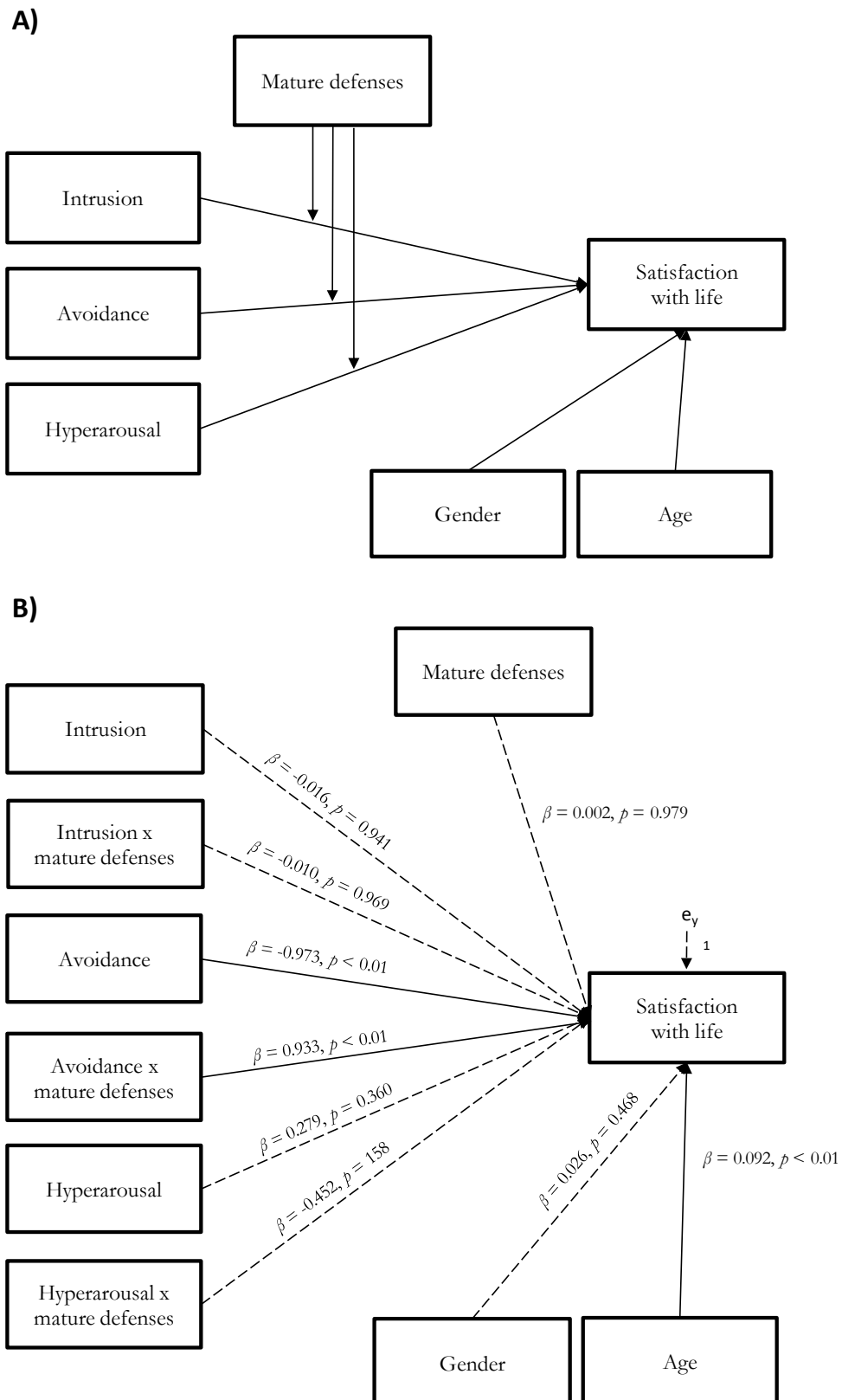


Figure 3: Conceptual (A) and statistical model (B) concerning the moderation of the mature defenses in the relationship of intrusion, avoidance, and hyperarousal with satisfaction with life, controlling for gender and age

The analysis showed that the symptoms of intrusion and avoidance did not significantly predict value satisfaction with life (see Table 3).

Table 3. Coefficients of the model involving intrusion, avoidance, hyperarousal, mature defenses, and satisfaction with life, controlling for gender and age.

Antecedent	Consequent				
	Y				
	<i>B</i>	<i>SE</i>	<i>p</i>	Bootstrap 95% CI	
X1	b_1	-0.018	0.240	0.941	[-0.5411; 0.5394]
X2	b_2	-0.912	0.307	< 0.01	[-1.5167; -0.2733]
X3	b_3	0.335	0.366	0.360	[-0.4148; 1.0349]
M	b_4	0.001	0.054	0.979	[-0.1040; 0.1201]
X1 x M	b_5	0.000	0.005	0.969	[-0.0114; 0.0102]
X2 x M	b_6	0.019	0.007	< 0.01	[0.0046; 0.0320]
X3 x M	b_7	-0.012	0.008	0.158	[-0.0278; 0.0053]
C1	b_8	0.391	0.538	0.468	[-0.6682; 1.4379]
C2	b_9	0.053	0.021	< 0.01	[0.0142; 0.0906]
Constant	i_Y	23.046	2.459	< 0.001	[18.3461; 27.3202]

$$R^2 = 0.136$$

$$F(9,693)=12.122, p < 0.001$$

X1 = Intrusion; X2 = Avoidance; X3 = Hyperarousal; W = Mature defenses; Y = Satisfaction with life; C1 = Gender (coded as 0 = Men; 1 = Women); C2 = Age.

However, avoidance level did significantly predict the value of satisfaction with life ($\beta = -0.97$, $p < 0.01$, LLCI = -1.5144–ULCI = -0.3103), with the significant moderation of mature defenses ($\beta = 0.93$, $p < 0.01$, LLCI = 0.0051–ULCI = 0.0319). Furthermore, gender showed no significant influences in the model, while age had a significant and positive effect on satisfaction with life ($\beta = 0.09$, $p < 0.01$, LLCI = 0.0127–ULCI = 0.0934). The VIF values did not exceed 5.0 (highest values: 3.707 for Avoidance and 3.602 for Hyperarousal), and the Tolerance ones were not below 0.20 (lowest values: 0.270 for Avoidance and 0.278 for Hyperarousal) indicating that multicollinearity did not constitute a limitation of the study.

Finally, the Bootstrap analysis confirmed the robustness and statistical solidity of the observed significant effects (see Table 2 and Table 3).

4. Discussion

The substantial variety of outcomes related to satisfaction with life attracts a justified and considerable interest in this construct, to the point that it has been studied from multiple perspectives (e.g., top-down and bottom-up) and in several contexts (e.g., clinical, organizational, etc...) over the years. (Egede et al., 2016; Erdogan, 2012) In this line, the present research aimed at investigating the factor that may be associated with satisfaction with life, by placing a specific focus on post-traumatic stress symptoms, mature defenses, and their interactions.

Results showed that post-traumatic stress symptoms were significantly and negatively related to satisfaction with life, supporting the first hypothesis (**H₁**). This data is in line with findings from previous research (Morgan, 2017, Gori et al., 2022b), where the negative impact on several areas of life and the functional deterioration deriving from PTSD was highlighted (Holowka & Marx, 2012; Karatzias et al., 2013) and the negative association between the general levels of post-traumatic stress symptoms and the subjective quality of life both in cross-sectional (D'Ardenne et al., 2005) and longitudinal studies (Schnurr et al., 2006) was found. Furthermore, mature defenses significantly moderated the relationship between post-traumatic stress symptoms and satisfaction with life, confirming the second hypothesis (**H₂**). Specifically, as the levels of mature defenses increased, the negative effect of post-traumatic stress symptoms on satisfaction with life weakened. Such finding is consistent with evidence showing that mature defenses were associated with higher adaptation and resilience in stressful conditions (Hersoug et al., 2021; Tanzilli, 2021), promoting better psychophysical health (Vaillant, 2022, Malone et al., 2013) and promoting subjective well-being (Lyke, 2016).

Moreover, the follow-up analysis has shown that the association between post-traumatic stress symptoms and satisfaction with life was mainly explained by the significant effect of avoidance. This finding echoes the outcomes of Kashdan and colleagues (Kashdan et al., 2010) studying a sample of veterans suffering from PTSD, where only those with high levels of avoidance reported significant impairment in well-being levels. Similar results were also replicated in cancer patients with PTSD, where it was shown that avoidance had a significant negative influence on patients' quality of life, also increasing their anxiety (Oliveri et al., 2019) and depression (Aguirre-Camacho et al., 2017). Plausibly, therefore, avoidance processes could limit the person's experiential range, preventing them from finding adaptive strategies for managing negative emotions and moving them away from rewarding experiences and well-being (Gori et al., 2021b). Consistent with this framework and with the results obtained in the previous analyses,

indeed, data showed that mature defenses significantly moderated also the relationship between avoidance and satisfaction with life, favouring the integration of painful experiences (Vaillant, 1995) and limiting the negative effects of this post-traumatic stress symptom.

Finally, the role of gender and age as potential confounders was tested, and all the relationships shown in the investigated models were still statistically solid regardless of these variables. Specifically, gender did not have a significant impact on satisfaction with life. In this regard, the scientific literature across different countries has found small (Joshanloo & Jovanović, 2020) or insignificant effects (Batz-Barbarich et al., 2018; Joshanloo, 2018). Parallely, a significant relationship was shown between age and satisfaction with life. Such data is in line with existing evidence (Daig et al., 2009) and is consistent with previous research that identifies a greater risk of psychological distress among younger subjects (Brooks et al., 2020).

This study presents some limitations that should be acknowledged. First, the cross-sectional nature of this research requires caution in the interpretation of causal links. An important challenge for future research could be the implementation of a longitudinal design to replicate such data. Furthermore, this study involved an online convenience sample, and this could limit the generalizability of these data. Indeed, recent data show that 9.6% of households in Italy do not have internet access at home and, among these, only 16.2% access from elsewhere (ISTAT, 2022). Therefore, although online methods are often used to assess PTSD or trauma-related mental health problems (e.g., Bonsaksen et al., 2020), it is important to highlight that those who do not have an internet connection may be not correctly represented by these results as well, and future research should confirm this data in more inclusive and probabilistic samples. Moreover, no measure was used to explore potentially traumatic events. In this regard, the definition of the boundaries of the stress factor criterion has emerged as a controversial aspect in the different editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM), from the definition of the disorder in the DSM-III (American Psychiatric Association, 1980) up to the current version of the DSM-5-TR (American Psychiatric Association, 2022), and there are debates in the literature about relying or not on DSM criterion A (Wathelet et al., 2021; Van Hooff et al., 2009; Laurel Franklin et al., 2019). Indeed, although some specific types of traumas may have prognostic value, the literature also highlights the need to consider the subjective opinion of individuals on whether an event is traumatic (Laurel Franklin et al., 2019) and supports the idea that the presence or absence of criterion A is not a determining factor for predicting the evolution of mental health symptoms after a stressful event (Wathelet et al., 2021). In this regard, van den Berg et al. (Van den Berg, 2017) showed no differences in the severity

of PTSD symptoms in patients who met criterion A concerning the traumatic event or not. Therefore, future research could enrich this debate, deepening the results obtained in the present study by integrating the assessment of the level of post-traumatic stress symptoms also based on criterion A. Finally, data were self-reported, and this may expose to reporting bias (e.g., desirability). A multi-method may overcome this issue in future research.

5. Conclusions

The present study investigated the negative association between post-traumatic stress symptoms and satisfaction with life, highlighting the critical protective role of mature defenses in this relationship. In addition, this association was further deepened, underscoring the centrality of the subdimension of avoidance. Such data may offer a further contribution to the research field linked to these variables, also through the integration with previous evidence that emphasizes the interrelation with other subjective or contextual dimensions (e.g., Erdogan et al., 2012, Gori et al., 2021c; Gori et al., 2021d, Gori et al., 2023b). Furthermore, the results of this study can provide interesting insights for developing interventions aimed at limiting the association between post-traumatic stress symptoms and lower life satisfaction. In this regard, it may be functional to focus on the specific symptomatic dimension that guides this association (avoidance) for which evidence has been provided about the effectiveness of specific psychological (e.g., Kimbrough et al., 2010) and/or pharmacological (e.g., Heresco-Levy et al., 2002) treatments, without neglecting the role of defense mechanisms by implementing the use of more mature and adaptive ones (Cramer, 2006). The current findings are in line with previous recommendations to consider the role of defenses in the therapy process (e.g., Békés et al., 2021; Di Giuseppe et al., 2020b; Kahraman-Erkuş, 2020; Settineri et al., 2019) and suggest the significance of therapeutic and preventive activity focused on promoting a stronger adherence to reality and minimizing distortions using mature mechanisms. Clinical interventions that prioritize the cultivation of mature defense mechanisms may limit the negative impact of traumatic events on individual well-being. By helping individuals develop healthier mechanisms to deal with stress by fostering healthy reality testing, therapists may therefore contribute to their clients' overall psychological resilience and improved quality of life. Concluding, the results of this research may thus have important practical implications by suggesting useful information to elaborate tailored interventions for both preventive and clinical activity.

Ethical approval

The study was approved by the first author's institutional Ethical Committee (Integrated Psychodynamic Psychotherapy Institute, IPPI; ethical approval number 001C/2021).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

Conflict of interest statement

The authors declare no conflict of interest.

Author Contributions

Conceptualization, A.G.; methodology, A.G. and E.T.; formal analysis, A.G. and E.T.; investigation, A.G.; data curation, A.G. and E.T.; writing—original draft preparation, A.G., E.T., and G.T.; writing—review and editing, A.G., E.T., A.M., G.T., G.C., M.C., L.J.; supervision, A.G. All authors have read and agreed to the published version of the manuscript.

References

1. Aguirre-Camacho, A., Pelletier, G., González-Márquez, A., Blanco-Donoso, L. M., García-Borreguero, P., & Moreno-Jiménez, B. (2017). The relevance of experiential avoidance in breast cancer distress: insights from a psychological group intervention. *Psycho-oncology*, 26(4), 469-475. <https://doi.org/10.1002/pon.4162>
2. American Psychiatric Association (1980). *Diagnostic And Statistical Manual of Mental Disorders*, 3rd ed. American Psychiatric Publishing.
3. American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., text revision. American Psychiatric Publishing.
4. American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. American Psychiatric Publishing.
5. American Psychiatric Association (2022) *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed., text revision; American Psychiatric Publishing.
6. Andrews, G., Singh, M., & Bond, M. (1993). The defense style questionnaire. *Journal of Nervous and mental Disease*, 181(4), 246–256. <https://doi.org/10.1097/00005053-199304000-00006>
7. Batz-Barbarich, C., Tay, L., Kuykendall, L., & Cheung, H. K. (2018). A meta-analysis of gender differences in subjective well-being: Estimating effect sizes and associations with gender inequality. *Psychological science*, 29(9), 1491-1503. <https://doi.org/10.1177%2F0956797618774796>
8. Békés, V., Prout, T. A., Di Giuseppe, M., Wildes Ammar, L., Kui, T., Arseno, G., Conversano, C. (2021). Initial validation of the Defense Mechanisms Rating Scales Q-sort: A Comparison of Trained and Untrained Raters. *Mediterranean Journal of Clinical Psychology*, 9(2). <https://doi.org/10.13129/2282-1619/mjcp-3107>
9. Bonsaksen, T., Heir, T., Schou-Bredal, I., Ekeberg, Ø., Skogstad, L., & Grimholt, T. K. (2020). Post-traumatic stress disorder and associated factors during the early stage of the COVID-19 pandemic in Norway. *International journal of environmental research and public health*, 17(24), 9210. <https://doi.org/10.3390/ijerph17249210>
10. Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
11. Busseri, M. A. (2018). Examining the structure of subjective well-being through meta-analysis of the associations among positive affect, negative affect, and life satisfaction. *Personality and Individual Differences*, 122, 68-71. <https://doi.org/10.1016/j.paid.2017.10.003>
12. Carvalho, A. F., Hyphantis, T. N., Taunay, T. C., Macêdo, D. S., Floros, G. D., Ottoni, G. L., ... & Lara, D. R. (2013). The relationship between affective temperaments, defensive styles and depressive symptoms in a large sample. *Journal of affective disorders*, 146(1), 58-65. <https://doi.org/10.1016/j.jad.2012.08.038>
13. Chang, Q., Xing, J., Ho, R. T., & Yip, P. S. (2019). Cyberbullying and suicide ideation among Hong Kong adolescents: The mitigating effects of life satisfaction with family, classmates and academic results. *Psychiatry research*, 274, 269-273. <https://doi.org/10.1016/j.psychres.2019.02.054>
14. Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: a quantitative review of prospective observational studies. *Psychosomatic medicine*, 70(7), 741-756. <https://doi.org/10.1097/PSY.0b013e31818105ba>

15. Cooper, S. H. (1998). Analyst subjectivity, analyst disclosure, and the aims of psychoanalysis. *Psychoanalytic Quarterly*, 67(3), 379-406. <https://doi.org/10.1080/00332828.1998.12006048>
16. Copanitsanou, P., Drakoutos, E., & Kechagias, V. (2018). Posttraumatic stress, depressive emotions, and satisfaction with life after a road traffic accident. *Orthopaedic nursing*, 37(1), 43-53. <https://doi.org/10.1097/NOR.0000000000000417>
17. Cramer, P. (2006). *Protecting the self: Defense mechanisms in action*. Guilford Press.
18. Craparo, G., Faraci, P., Rotondo, G., & Gori, A. (2013). The Impact of Event Scale–Revised: psychometric properties of the Italian version in a sample of flood victims. *Neuropsychiatric Disease and Treatment*, 9, 1427–1432. <https://doi.org/10.2147/ndt.s51793>
19. Daig, I., Herschbach, P., Lehmann, A., Knoll, N., & Decker, O. (2009). Gender and age differences in domain-specific life satisfaction and the impact of depressive and anxiety symptoms: a general population survey from Germany. *Quality of Life Research*, 18, 669-678. <https://doi.org/10.1007/s11136-009-9481-3>
20. D'Ardenne, P., Capuzzo, N., Fakhoury, W. K., Jankovic-Gavrilovic, J., & Priebe, S. (2005). Subjective quality of life and posttraumatic stress disorder. *The Journal of nervous and mental disease*, 193(1), 62-65. <https://doi.org/10.1097/01.nmd.0000149221.09294.92>
21. Debell, F., Fear, N. T., Head, M., Batt-Rawden, S., Greenberg, N., Wessely, S., & Goodwin, L. (2014). A systematic review of the comorbidity between PTSD and alcohol misuse. *Social psychiatry and psychiatric epidemiology*, 49, 1401-1425. <https://doi.org/10.1007/s00127-014-0855-7>
22. Di Fabio, A., & Gori, A. (2016). Measuring adolescent life satisfaction: Psychometric properties of the satisfaction with life scale in a sample of Italian adolescents and young adults. *Journal of Psychoeducational Assessment*, 34(5), 501-506. <https://doi.org/10.1177/0734282915621223>
23. Di Fabio, A., & Gori, A. (2020). Satisfaction with Life Scale among Italian workers: Reliability, factor structure and validity through a big sample study. *Sustainability*, 12(14), 5860. <https://doi.org/10.3390/su12145860>
24. Di Giuseppe, M., Conversano, C. (2022). Psychological components of chronic diseases: the link between defense mechanisms and alexithymia. *Mediterranean Journal of Clinical Psychology*, 10(3). <https://doi.org/10.13129/2282-1619/mjcp-3602>
25. Di Giuseppe, M., Miniati, M., Miccoli, M., Ciacchini, R., Orrù, R., Lo Sterzo, R., Di Silvestre, A., Conversano, C. (2020a). Defensive responses to stressful life events associated with cancer diagnosis. *Mediterranean Journal of Clinical Psychology*, 8(1). <https://doi.org/10.6092/2282-1619/mjcp-2384>
26. Di Giuseppe, M., Prout, T.A., Fabiani, M., Kui, T. (2020b). Defensive profile of parents of children with externalizing problems receiving Regulation Focused Psychotherapy for Children (RFP-C): A pilot study. *Mediterranean Journal of Clinical Psychology*, 8(2). <https://doi.org/10.6092/2282-1619/mjcp-2515>
27. Di Trani, M., Pippo, A.C., Renzi, A. (2022). Burnout in Italian hospital physicians during the COVID-19 pandemic: a pilot study on the roles of alexithymia and defense mechanisms. *Mediterranean Journal of Clinical Psychology*, 10(1). <https://doi.org/10.13129/2282-1619/mjcp-3250>
28. Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of personality assessment*, 49(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13

29. Diener, E., & Suh, E. M. (1999). National differences in subjective wellbeing. In Kahneman, D., Diener, E., & Schwarz, N., (Eds), *Well-being: The foundations of hedonic psychology* (pp 434–450). Russell Sage Foundation.
30. Egede, L. E., Acierno, R., Knapp, R. G., Walker, R. J., Payne, E. H., & Frueh, B. C. (2016). Psychotherapy for depression in older veterans via telemedicine: effect on quality of life, satisfaction, treatment credibility, and service delivery perception. *The Journal of clinical psychiatry*, 77(12), 16304.
<https://doi.org/10.4088/JCP.16m10951>
31. Erdogan, B., Bauer, T. N., Truxillo, D. M., & Mansfield, L. R. (2012). Whistle while you work: A review of the life satisfaction literature. *Journal of management*, 38(4), 1038-1083.
<https://doi.org/10.1177/0149206311429379>
32. Farma, T., & Cortinovis, I. (2000). Misurare i meccanismi di difesa attraverso il "Defense Style Questionnaire" a 40 item. Attendibilita' dello strumento e suo utilizzo nel contesto Italiano [Measuring defense mechanism through the 40 items of the "Defense Style Questionnaire." Reliability of the instrument and its use in the Italian context]. *Ricerche di Psicologia*, 24(3-4), 127–144.
33. Fergusson, D. M., McLeod, G. F. H., Horwood, L. J., Swain, N. R., Chapple, S., & Poulton, R. (2015). Life satisfaction and mental health problems (18 to 35 years). *Psychological medicine*, 45(11), 2427-2436.
<https://doi.org/10.1017/S0033291715000422>
34. Fischer, I. C., Shanahan, M. L., Hirsh, A. T., Stewart, J. C., & Rand, K. L. (2020). The relationship between meaning in life and post-traumatic stress symptoms in US military personnel: A meta-analysis. *Journal of Affective Disorders*, 277, 658-670. <https://doi.org/10.1016/j.jad.2020.08.063>
35. Freud, S. (1894). *The neuro-psychoses of defence*. Hogarth Press.
36. Freud, S. (1915). *Repression*. Hogarth Press.
37. Freud, S. (1926). *Inhibitions, symptoms and anxiety*. Hogarth Press.
38. Gori, A., & Topino, E. (2021). Across the COVID-19 waves; assessing temporal fluctuations in perceived stress, post-traumatic symptoms, worry, anxiety and civic moral disengagement over one year of pandemic. *International Journal of Environmental Research and Public Health*, 18(11), 5651.
<https://doi.org/10.3390/ijerph18115651>
39. Gori, A., Topino, E., & Caretti, V. (2022a). The impact of COVID-19 lockdown on perceived stress: The role of defence mechanisms and coping strategies. *Journal of Contingencies and Crisis Management*, 30(4), 379-390.
<https://doi.org/10.1111/1468-5973.12380>
40. Gori, A., Topino, E., & Di Fabio, A. (2020a). The protective role of life satisfaction, coping strategies and defense mechanisms on perceived stress due to COVID-19 emergency: A chained mediation model. *Plos one*, 15(11), e0242402. <https://doi.org/10.1371/journal.pone.0242402>
41. Gori, A., Topino, E., & Musetti, A. (2023a). The relationship among anxiety, worry, perceived stress, defense mechanisms, and high levels of post-traumatic stress symptoms: A discriminant analytic approach. *Journal of Personalized Medicine*, 13(2), 237. <https://doi.org/10.3390/jpm13020237>
42. Gori, A., Topino, E., & Musetti, A. (2023b). Pathways towards posttraumatic stress symptomatology: A moderated mediation model including perceived stress, worry, and defense mechanisms. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. <https://doi.org/10.1037/tra0001435>

43. Gori, A., Topino, E., Craparo, G., Grotto, R. L., & Caretti, V. (2021b). An empirical model for understanding the threat responses at the time of COVID-19. *Mediterranean Journal of Clinical Psychology, 9*(1).
<https://doi.org/10.6092/2282-1619/mjcp-2916>
44. Gori, A., Topino, E., Musetti, A., Giannini, M., Grotto, R. L., Svicher, A., & Di Fabio, A. (2022b). The Protective Role of Mature Defense Mechanisms on Satisfaction with Life in the COVID-19 Era: A Moderated Mediation Analysis. *Behavioral Sciences, 12*(8), 290. <https://doi.org/10.3390/bs12080290>
45. Gori, A., Topino, E., Palazzeschi, L., & Di Fabio, A. (2021a). Which personality traits can mitigate the impact of the pandemic? Assessment of the relationship between personality traits and traumatic events in the COVID-19 pandemic as mediated by defense mechanisms. *PLoS one, 16*(5), e0251984.
<https://doi.org/10.1371/journal.pone.0251984>
46. Gori, A., Topino, E., Sette, A., & Cramer, H. (2021c). Mental health outcomes in patients with cancer diagnosis: Data showing the influence of resilience and coping strategies on post-traumatic growth and post-traumatic symptoms. *Data in brief, 34*, 106667. <https://doi.org/10.1016/j.dib.2020.106667>
47. Gori, A., Topino, E., Sette, A., & Cramer, H. (2021d). Pathways to post-traumatic growth in cancer patients: moderated mediation and single mediation analyses with resilience, personality, and coping strategies. *Journal of affective disorders, 279*, 692-700. <https://doi.org/10.1016/j.jad.2020.10.044>
48. Grubbs, J. B., & Chapman, H. (2019). Predicting gambling situations: the roles of impulsivity, substance use, and post-traumatic stress. *Substance abuse: research and treatment, 13*, 1178221819852641.
<https://doi.org/10.1177/1098221819852641>
49. Haar, J. M., & Roche, M. A. (2010). Family supportive organization perceptions and employee outcomes: The mediating effects of life satisfaction. *The International Journal of Human Resource Management, 21*(7), 999-1014. <https://doi.org/10.1080/09585191003783462>
50. Hassan, A. N., Le Foll, B., Imtiaz, S., & Rehm, J. (2017). The effect of post-traumatic stress disorder on the risk of developing prescription opioid use disorder: Results from the National Epidemiologic Survey on Alcohol and Related Conditions III. *Drug and alcohol dependence, 179*, 260-266.
<https://doi.org/10.1016/j.drugalcdep.2017.07.012>
51. Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis second edition: A regression-based approach*. Guilford Press, New York.
52. Heresco-Levy, U., Kremer, I., Javitt, D. C., Goichman, R., Reshef, A., Blanaru, M., & Cohen, T. (2002). Pilot-controlled trial of D-cycloserine for the treatment of post-traumatic stress disorder. *International Journal of Neuropsychopharmacology, 5*(4), 301-307. <https://doi.org/10.1017/S1461145702003061>
53. Hersoug, A. G., Wærsted, M., & Lau, B. (2021). Defensive functioning moderates the effects of nondirective meditation. *Frontiers in psychology, 12*, 629784. <https://doi.org/10.3389/fpsyg.2021.629784>
54. Holowka, D. W., & Marx, B. P. (2012) Assessing PTSD-related functional impairment and quality of life. In Beck, J. G., Sloan, D. M. (Eds.), *The Oxford handbook of traumatic stress disorders* (pp 315-330). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195399066.013.0021>
55. Huang, L., Xu, X., Zhang, L., Zheng, D., Liu, Y., Feng, B., ... & Zhang, Z. (2022). Post-traumatic stress disorder symptoms and quality of life of COVID-19 survivors at 6-month follow-up: a cross-sectional observational study. *Frontiers in Psychiatry, 2416*. <https://doi.org/10.3389/fpsyg.2021.782478>

56. ISTAT (2022). *Internet: accesso e tipo di utilizzo*. Available online: <https://dati.istat.it/Index.aspx?DataSetCode=DCCV ICT> (accessed on 28 August 2022).
57. Jakupcak, M., Conybeare, D., Phelps, L., Hunt, S., Holmes, H. A., Felker, B., ... & McFall, M. E. (2007). Anger, hostility, and aggression among Iraq and Afghanistan war veterans reporting PTSD and subthreshold PTSD. *Journal of Traumatic Stress: Official Publication of the International Society for Traumatic Stress Studies*, 20(6), 945-954. <https://doi.org/10.1002/jts.20258>
58. Jakupcak, M., Hoerster, K. D., Varra, A., Vannoy, S., Felker, B., & Hunt, S. (2011). Hopelessness and suicidal ideation in Iraq and Afghanistan war veterans reporting subthreshold and threshold posttraumatic stress disorder. *The Journal of nervous and mental disease*, 199(4), 272-275. <https://doi.org/10.1097/NMD.0b013e3182124604>
59. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An introduction to statistical learning* (Vol. 112, p. 18). New York: springer. <https://doi.org/10.1007/978-1-4614-7138-7>
60. Johnson, P. O., & Neyman, J. (1936). Tests of certain linear hypotheses and their application to some educational problems. *Statistical Research Memoirs*, 1, 57-93.
61. Joshanloo, M. (2018). Gender differences in the predictors of life satisfaction across 150 nations. *Personality and Individual Differences*, 135, 312-315. <https://doi.org/10.1016/j.paid.2018.07.043>
62. Joshanloo, M., & Jovanović, V. (2020). The relationship between gender and life satisfaction: Analysis across demographic groups and global regions. *Archives of women's mental health*, 23, 331-338. <https://doi.org/10.1007/s00737-019-00998-w>
63. Kahraman-Erkuş, Ö. (2020). Lacanian Perverse Structure and Disavowal Mechanism: A Clinical Examination. *Mediterranean Journal of Clinical Psychology*, 8(2), 2282-1619. <https://doi.org/10.6092/2282-1619/mjcp-2283>
64. Karatzias, T., Chouliara, Z., Power, K., Brown, K., Begum, M., McGoldrick, T., & MacLean, R. (2013). Life satisfaction in people with post-traumatic stress disorder. *Journal of Mental Health*, 22(6), 501-508. <https://doi.org/10.3109/09638237.2013.819418>
65. Kashdan, T. B., Breen, W. E., & Julian, T. (2010). Everyday strivings in war veterans with posttraumatic stress disorder: Suffering from a hyper-focus on avoidance and emotion regulation. *Behavior therapy*, 41(3), 350-363. <https://doi.org/10.1016/j.beth.2009.09.003>
66. Kimbrough, E., Magyari, T., Langenberg, P., Chesney, M., & Berman, B. (2010). Mindfulness intervention for child abuse survivors. *Journal of clinical psychology*, 66(1), 17-33. <https://doi.org/10.1002/jclp.20624>
67. Laurel Franklin, C., Raines, A. M., & Hurlocker, M. C. (2019). No trauma, no problem: Symptoms of posttraumatic stress in the absence of a criterion a stressor. *Journal of Psychopathology and Behavioral Assessment*, 41, 107-111. <https://doi.org/10.1007/s10862-018-9692-4>
68. Lyke, J. (2016). Defense style predicts subjective well-being in a non-clinical sample. *The Journal of Happiness & Well-Being*, 4(1), 62-71.
69. Lyons, M. D., Huebner, E. S., Hills, K. J., & Van Horn, M. L. (2013). Mechanisms of change in adolescent life satisfaction: A longitudinal analysis. *Journal of school psychology*, 51(5), 587-598. <https://doi.org/10.1016/j.jsp.2013.07.001>

70. Mahamid, F. A., Berte, D. Z., & Bdier, D. (2022). Problematic internet use and its association with sleep disturbance and life satisfaction among Palestinians during the COVID-19 pandemic. *Current Psychology*, 41(11), 8167-8174. <https://doi.org/10.1007/s12144-021-02124-5>
71. Mahmoud, J. S. R., Staten, R. T., Hall, L. A., & Lennie, T. A. (2012). The relationship among young adult college students' depression, anxiety, stress, demographics, life satisfaction, and coping styles. *Issues in mental health nursing*, 33(3), 149-156. <https://doi.org/10.3109/01612840.2011.632708>
72. Malone, J. C., Cohen, S., Liu, S. R., Vaillant, G. E., & Waldinger, R. J. (2013). Adaptive midlife defense mechanisms and late-life health. *Personality and individual differences*, 55(2), 85-89. <https://doi.org/10.1016/j.paid.2013.01.025>
73. Matud, M. P., Bethencourt, J. M., & Ibáñez, I. (2014). Relevance of gender roles in life satisfaction in adult people. *Personality and individual differences*, 70, 206-211. <https://doi.org/10.1016/j.paid.2014.06.046>
74. Menard, S. (1995). *Applied logistic regression analysis*. Sage.
75. Morgan, J. K., Desmarais, S. L., Mitchell, R. E., & Simons-Rudolph, J. M. (2017). Posttraumatic stress, posttraumatic growth, and satisfaction with life in military veterans. *Military Psychology*, 29(5), 434-447. <https://doi.org/10.1037/mil0000182>
76. Morriss, J., Saldarini, F., & Van Reekum, C. M. (2019). The role of threat level and intolerance of uncertainty in extinction. *International Journal of Psychophysiology*, 142, 1-9. <https://doi.org/10.1016/j.ijpsycho.2019.05.013>
77. Oliveri, S., Arnaboldi, P., Pizzoli, S. F. M., Faccio, F., Giudice, A. V., Sangalli, C., ... & Pravettoni, G. (2019). PTSD symptom clusters associated with short-and long-term adjustment in early diagnosed breast cancer patients. *ecancermedicalscience*, 13, 917. <https://doi.org/10.3332%2Fecancer.2019.917>
78. Pacella, M. L., Hruska, B., & Delahanty, D. L. (2013). The physical health consequences of PTSD and PTSD symptoms: a meta-analytic review. *Journal of anxiety disorders*, 27(1), 33-46. <https://doi.org/10.1016/j.janxdis.2012.08.004>
79. Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, 5 (2), 164-172. <https://doi.org/1040-3590.5.2.164>
80. Salovey, P., Rothman, A. J., Detweiler, J. B., & Steward, W. T. (2000). Emotional states and physical health. *American psychologist*, 55(1), 110-121. <https://doi.org/10.1037//0003-066x.55.1.110>
81. Schnurr, P. P., Hayes, A. F., Lunney, C. A., McFall, M., & Uddo, M. (2006). Longitudinal analysis of the relationship between symptoms and quality of life in veterans treated for posttraumatic stress disorder. *Journal of consulting and clinical psychology*, 74(4), 707. <https://doi.org/10.1037/0022-006X.74.4.707>
82. Settineri, S., Merlo, E. M., Frisone, F., Alibrandi, A., Carrozzino, D., Diaconu, C. C., & Pappalardo, S. M. (2019). Suppression Mental Questionnaire App: a mobile web service-based application for automated real-time evaluation of adolescent and adult suppression. *Mediterranean Journal of Clinical Psychology*, 7(1). <https://doi.org/10.6092/2282-1619/2019.7.2056>
83. Steger, M. F., Owens, G. P., & Park, C. L. (2015). Violations of war: Testing the meaning-making model among Vietnam veterans. *Journal of Clinical Psychology*, 71(1), 105-116. <https://doi.org/10.1002/jclp.22121>
84. Tanaka, T., Takeshita, S., Inoue, T., Yoshino, A., Sawamura, T., & Toda, H. (2022). Psychological and traumatic stress and the risk of developing diabetes and psychiatric disorders after a disaster-relief mission:

- An eight-year longitudinal study of Japan Maritime Self-Defense Force personnel dispatched for the 2011 Great East Japan Earthquake disaster-relief mission. *Journal of psychiatric research*, 146, 118-124.
<https://doi.org/10.1016/j.jpsychires.2021.12.046>
85. Tanzilli, A., Di Giuseppe, M., Giovanardi, G., Boldrini, T., Caviglia, G., Conversano, C., & Lingiardi, V. (2021). Mentalization, attachment, and defense mechanisms: a Psychodynamic Diagnostic Manual-2-oriented empirical investigation. *Research in Psychotherapy: Psychopathology, Process, and Outcome*, 24(1), 31–41.
<https://doi.org/10.4081%2Fripppo.2021.531>
 86. Topino, E., & Gori, A. (2023). Data showing that post-traumatic stress symptoms and defense mechanisms change based on perceived stress levels: A multivariate analysis of variance approach during the COVID-19 pandemic. *Data in Brief*, 109298. <https://doi.org/10.1016/j.dib.2023.109298>
 87. Trzebiński, J., Cabański, M., & Czamecka, J. Z. (2020). Reaction to the COVID-19 pandemic: The influence of meaning in life, life satisfaction, and assumptions on world orderliness and positivity. *Journal of Loss and Trauma*, 25(6-7), 544-557. <https://doi.org/10.1080/15325024.2020.1765098>
 88. Vaillant, G. E. (1992). *Ego mechanisms of defense: a guide for clinicians and researchers*. American Psychiatric Pub.
 89. Vaillant, G. E. (1995). *The wisdom of the ego*. Harvard University Press.
 90. Vallant, G. E. (2022). Involuntary coping mechanisms: a psychodynamic perspective. *Dialogues in clinical neuroscience*, 13(3), 366-370. <https://doi.org/10.31887/DCNS.2011.13.2/gvaillant>
 91. Van den Berg, L. J., Tollenaar, M. S., Spinhoven, P., Penninx, B. W., & Elzinga, B. M. (2017). A new perspective on PTSD symptoms after traumatic vs stressful life events and the role of gender. *European Journal of Psychotraumatology*, 8(1), 1380470. <https://doi.org/10.1080/20008198.2017.1380470>
 92. Van Hooff, M., McFarlane, A. C., Baur, J., Abraham, M., & Barnes, D. J. (2009). The stressor Criterion-A1 and PTSD: a matter of opinion?. *Journal of Anxiety Disorders*, 23(1), 77-86.
<https://doi.org/10.1016/j.janxdis.2008.04.001>
 93. Wathelet, M., d'Hondt, F., Bui, E., Vaiva, G., & Fovet, T. (2021). Posttraumatic stress disorder in time of COVID-19: Trauma or not trauma, is that the question?. *Acta Psychiatrica Scandinavica*, 144(3), 310 – 311.
<https://doi.org/10.1111%2Ffacps.13336>
 94. Weiss, D. S. & Marmar, C. R. (1996) The Impact of Event Scale – Revised. In Wilson J. P. & Keane T. M. (Eds.), *Assessing psychological trauma and PTSD* (pp. 399-411). Guilford.
 95. Zaragoza Scherman, A., Salgado, S., Shao, Z., & Berntsen, D. (2020). Younger adults report more distress and less well-being: A cross-cultural study of event centrality, depression, post-traumatic stress disorder and life satisfaction. *Applied Cognitive Psychology*, 34(5), 1180-1196. <https://doi.org/10.1002/acp.3707>



©2023 by the Author(s); licensee Mediterranean Journal of Clinical Psychology, Messina, Italy. This article is an open access article, licensed under a Creative Commons Attribution 4.0 Unported License. Mediterranean Journal of Clinical Psychology, Vol. 11, No. 2 (2023). International License (<https://creativecommons.org/licenses/by/4.0/>).
DOI: 10.13129/2282-1619/mjcp-3689