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Investigating the Influence of Age and Trauma Type on Mindfulness attention awareness in PTSD Patients

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Abstract

This study investigated the association between mindfulness attention awareness, age, and specific trauma types among individuals with Post-Traumatic Stress Disorder (PTSD). A cross-sectional, correlational design was employed with a sample of 200 adults (aged 19 years and older) diagnosed PTSD patients. Mindfulness was assessed using the Mindfulness Attention Awareness Scale. Independent samples *t*-tests and One-Way Analysis of Variance (ANOVA) were used for data analysis. Results indicated a statistically significant difference in mindfulness attention awareness according to age, with older adults (M = 28.18, SD = 8.39, n = 94) reporting significantly higher levels than younger adults (M = 25.26, SD = 9.20, n = 106), $t(197.83) = -2.03$, $p = .043$. Furthermore, a statistically significant overall effect of trauma type on mindfulness was found, $F(3, 196) = 4.76$, $p = .003$, with a medium effect size ($\eta p2 = 0.068$). Physical violence was at highest in trauma followed by death of loved ones. These findings suggest that both age and the type of traumatic experience are associated with mindfulness attention awareness in PTSD patients, highlighting the need for age- and trauma-informed approaches in intervention development.

Keywords: Trauma, PTSD, Trauma Types, Age, Mindfulness Attention Awareness

Introduction

In this context, the subject of focus is Post-Traumatic Stress Disorder (PTSD) and the nature of its development, the impact of the type of trauma involved, the role of the age of the individual in coping with trauma, and the potential of mindfulness (e.g., Mindful Attention Awareness) to aid in recovery.

Post-Traumatic Stress Disorder (PTSD)

Post-Traumatic Stress Disorder is a complicated psychiatric disorder that some people experience after exposure to actual or threatened death, serious injury, or sexual violence (American Psychiatric Association, 2013). Exposure can be either direct, witnessed, or learned about a close family member or friend (American Psychiatric Association, 2013). The symptoms of PTSD are categorized in four groups: (1) intrusion (e.g., intrusive memories, nightmares, flashbacks of the

event), (2) avoidance (e.g., avoiding reminders of the trauma), (3) negative alterations in cognition and mood (e.g., distorted beliefs or feelings of detachment), and (4) marked alterations in arousal and reactivity (e.g., hypervigilance, irritability, sleep disturbance) (Mann et al., 2024). Symptoms must last more than one month and cause clinically significant distress or functional impairment for one to be diagnosed with PTSD (Center for Substance Abuse Treatment, 2014). The lifetime prevalence of PTSD in the adult population of the United States is estimated to be around 6%, and the 12-month prevalence is roughly 4%. The impact of PTSD on an individual psychologically is far-reaching and can affect one's cognition, mood, somatic experiences, and behavior (Sartor et al., 2023). This can cause a prolonged impairment, a high likelihood of co-occurring psychiatric diseases, including depression and anxiety, problems with misuse of alcohol and drugs, and higher risk of suicide. People can experience prolonged negative affect, impaired concentration, and a sense of disconnection from other people (Mayo Clinic, 2024).

Types of Trauma

Traumatic events occur across a spectrum, and we can classify them in a number of different ways, which will often dictate the level of severity and type of psychological effects.

Interpersonal vs. Non-interpersonal Trauma:

Interpersonal trauma captures events which are caused by humans, and which often involve an intentional act or breach of trust (e.g., abuse, sexual violence, intimate partner violence). Interpersonal trauma is associated with a greater risk for both acute and chronic posttraumatic stress than non-interpersonal trauma. Non-interpersonal trauma captures events which are not caused by a human act, such as accidents or natural disasters. (Cruz et al., 2022)

Specific Trauma Examples:

Combat	Exposure during military service (Mayo Clinic, 2024).
Accident	Serious accidents like car crashes (Mayo Clinic, 2024).
Abuse	Childhood physical or sexual abuse is a common event that can lead to PTSD (Mayo Clinic, 2024)
Disaster	Exposure to fires or natural disasters (Mayo Clinic, 2024).

PTSD and Its Psychological Mechanism

PTSD Symptoms: A Brief Overview

Posttraumatic Stress Disorder (PTSD) is a condition that follows exposure to actual or threatened death, serious injury, or sexual violence and is diagnosed by assessing four clusters of symptoms (Foa et al., 2009):

1.Re-experiencing: Intrusive memories, upsetting dreams, or flashbacks to the traumatic event (Gore, 2024).

2.Avoidance: Attempts to avoid negative thoughts, feelings, or reminders of trauma (or reminders that could elicit thoughts or feelings related to trauma) (e.g., people, places, events) (Gore, 2024).

3.Negative Alterations in Cognition and Mood: Persistent inability to experience positive emotions, negative beliefs about themselves and/or the world, emotional numbing, and distorted cognitions (Gore, 2024).

4.Hyperarousal and Reactivity: Irritable behavior, reckless or self-destructive behavior, sleep disturbance, hypervigilance, or exaggerated startle response (Gore, 2024).

Neuropsychological and Emotional Dysregulation Deficits

A feature of PTSD is emotional dysregulation (Valentino & Edler, 2024; Lanius et al., 2010), often represented by:

- **Alexithymia:** Individuals have difficulty identifying, differentiating, and/or describing their own feelings.
- **Executive Functioning Deficits:** These include difficulties in executive functioning processes related to abilities such as attentional control (the ability to intentionally shift attention or maintain attention), causing sustained threat monitoring (hyper-vigilance) and difficulties in disengaging from trauma-related stimuli (Valentino & Edler, 2024; Lanius et al., 2010).

Mindfulness and Mindful Attention Awareness

Mindfulness is a psychological construct defined as the "awareness that arises through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment," which was proposed by Kabat-Zinn in (2003). The two main, and essential elements of mindfulness are:

1. Self-regulation of attention: The non-elaborative observation of one's experience from moment to moment (Keng et al., 2011).

2. Orientation to one's experience: The holding of an attitude of curiosity, openness, and nonjudgmental acceptance toward that experience (Keng et al., 2011).

Connection to Emotional Regulation and Trauma Recovery

Mindfulness is consistently linked to more adaptive intrapersonal emotion regulation (Schuman-Olivier et al., 2020). Mindfulness reduces the magnitude of emotional responses, increases one's tolerability of emotional experiences, and allows for more optimal emotional recovery. By cultivating clarity of consciousness, mindfulness enables individuals to detach from ineffective, negative, thought patterns such as rumination, and catastrophizing which are paramount in symptoms of PTSD. Mindfulness based interventions are increasingly being used in treating PTSD and its related outcomes. Mindfulness assists trauma survivors with cultivating a willingness to feel emotional distress while simultaneously facilitating one's attention to the present, rather than numbing distressing events or being involuntarily flooded with disturbing memories of past events (Gkintoni et al., 2025; Atta et al., 2024).

Mindfulness Attention Awareness and PTSD

The Mindful Attention Awareness Scale (MAAS) is a well-known and frequently used 15-item measure that assesses a core characteristic of dispositional mindfulness, namely, the ability for open or receptive awareness and attention to what is happening in the present moment (Brown & Ryan, 2016). The MAAS is particularly relevant for PTSD research since it directly measures the "awareness" component that trauma can disrupt.

Empirical Evidence

There is a large body of empirical literature to support a strong inverse association: Higher trait mindfulness is consistently related to lower PTSD symptom severity (Boyd et al., 2018; Thompson & Waltz, 2008). Mindfulness is also positively associated with better emotional regulation, better coping, and better well-being in trauma-exposed populations (Kachadourian et al., 2021).

Mitigation Mechanisms

Mindfulness is thought to alleviate PTSD symptoms by counteracting maladaptive processes:

- **Reduction of Rumination and Avoidance:** When using mindfulness to invite non-judgmental acceptance of experience (internal) it helps engage an active, non-reactive way to process internal thoughts and feelings around trauma, decreasing the effort to suppress or avoid trauma-related thoughts and feelings (Segal et al., 2002). This active, non-reactive processing helps to prevent trauma-related symptoms (Boyd et al., 2018).
- **Reduction in Hypervigilance:** Focusing on present-moment experience helps to reduce the over-focusing on threat cues and allows attention to be moved away from the anxious, future-oriented state of hypervigilance (Lanius et al., 2010).

Trauma and Dispositional Mindfulness Capacity

Prior studies suggest that trauma exposure is related to decrease dispositional mindfulness capacity (Brown & Ryan, 2003). Trauma exposure is thought to alter one's capacity for present-moment awareness and attention control to maintain a focus on potentially past danger (e.g., intrusions/rumination) or on a future threat (e.g., hypervigilance), resulting in a mentally "pulled away" state from the present (non-threatening) experience (Ollendick and Davis, 2006).

Gaps in Literature

Despite the clear link the impact of demographic and trauma characteristics as moderating variables has yet to be fully developed and explored in the literature (Harper et al., 2022). Specifically, the literature has not fully examined how an individual's age and type of trauma exposure interact with and impact the mindfulness-PTSD relationship.

Role of Age in PTSD and Mindfulness

Age and Trauma Processing

Age is a significant factor in trauma processing, coping styles, and resilience:	
Younger Adults	Due to consistently ongoing neurodevelopment, youth tend to be more emotionally reactive and impulsive than adults, which may worsen some aspects of the emotional dysregulation component of PTSD (Valentino & Edler, 2024).
Older Adults	They also may have more adaptive ways of coping as a result of maturity and life experience, yet they often have more cumulative trauma exposures over their lifetimes (Ogle et al., 2014; Pietrzak et al., 2011). This cumulative trauma load predicts greater PTSD symptom severity in older ages (Pietrzak et al., 2011).

Mixed Findings and Perspectives

In their investigations of age differences in PTSD and mindfulness, researchers can provide inconsistent findings (Hofmann et al., 2010). Some studies indicate that mindfulness disposition could further increase with age (Kneeland et al., 2020), while others fail to find any differences in mindfulness disposition across the lifespan (Hofmann et al., 2010). Developmentally speaking, neurobiological changes related to aging (such as changing prefrontal cortex functioning) may improve one's emotional regulation while being compromised by the long-term neurobiological consequences of trauma (Lanius et al., 2010).

Effect of Trauma Type on Mindfulness & PTSD

Differentiation of Trauma Type

Traumatic events can be broadly distinguished by:

1. Interpersonal Trauma, which refers to events that are caused by another human, (i.e., physical/sexual abuse, sexual assault, combat- exposure to atrocities) (Cruz et al., 2022)
2. Non-interpersonal trauma, which is an event not due to human intention (e.g., accidents, natural disasters) (Cruz et al., 2022).

Interpersonal Trauma and Impairment

Research suggests that interpersonal trauma, and especially interpersonal trauma with chronicity, early onset, and trust violation (e.g., childhood abuse), is a stronger predictor of Complex PTSD symptoms (i.e., symptoms that include extreme difficulties with self-regulation of emotion, self-concept, and relationships) and greater mindfulness impairment than non-interpersonal trauma exposure. This is because betrayal and recurrent injury by an attachment figure affect a person's sense of self and their trust in the world more fundamentally and powerfully (Cruz et al., 2022).

Trauma Characteristics and Mindfulness

The chronicity (long-term/repeated exposure), intensity, and proximity (direct experience vs. witnessing) of exposure to trauma are all important variables that influence a person's mindfulness experience and ability to self-regulate. The trauma type may also moderate the mindfulness-PTSD relationship; i.e., in individuals with more severe chronic trauma relating to interpersonal relationships, the potential for mindfulness to decrease symptoms may be diminished because of deep profound and chronic deficits in emotional and relational functioning (Boyd et al., 2018).

Study Rationale

While the number of mindfulness-based programs for PTSD is on the rise, there has been limited research on the joint impact of both age and trauma type on habitual mindful attention awareness. Understanding the interaction between age and trauma conditioning on the dependent variable is important. If younger adults, or individuals seeking services because of a trauma history of interpersonal violence exhibit a significantly lower baseline mindfulness ability, this would prompt a recommendation for greater attention to how to deliver mindfulness-based therapies which may include greater levels of personal, trauma-evidenced and age-appropriate mindfulness-based interventions, beginning with the most foundational (self-regulation and grounding) (Boyd et al., 2018). This study will add to the growing base of literature by advancing the developmental and trauma-based evidence as it relates to mindful attention, and awareness on the mindfulness literature, and hope to develop more complex model that still remains actionable and enables practitioners to prioritize their resources.

Research Objectives

1. To find out whether PTSD patients' mindfulness attention awareness is influenced by their age.
2. To find out whether PTSD patients' mindfulness attention awareness is influenced by their trauma type.

Research Hypotheses

1. **H1:** PTSD patients' mindfulness attention awareness will vary significantly by age group.
2. **H2:** PTSD patients' levels of mindfulness attention awareness will differ significantly depending on the type of trauma they experienced.

Methodology

Research Design

Cross-sectional research design was used for this study and measuring mindfulness attention awareness, psychological distress and social anxiety.

Target Population

Population for the study was the individuals who have post-traumatic stress disorder diagnosed by psychologist or health care professional.

Sampling Technique

Non-probability criterion sampling technique was used for data collection. Sample size was based on the availability of PTSD patients. Only those participated in the study who are diagnosed as PTSD patients by a psychologist or health care professional. Total 200 PTSD patients participated in the study from clinics and hospitals of Gujrat. From different hospitals and clinics, patients of PTSD were recruited. These patients were adults aged 19 and older.

Inclusion/Exclusion Criteria

Only those participants included in the study who were diagnosed by healthcare professional as post-traumatic stress disorder patients, who are aged 19 and above, who give willingness to participate in the study and who are able to understand and respond to the questionnaire. Those participants excluded without a confirm diagnoses of post-traumatic stress disorder and the participants with co-occurrence of other health problem or psychiatric disorder.

Measures

Self-Made informed consent in Urdu was used that explained purpose of study and ensured willingness of participants also informed the participants about confidentiality, privacy and other ethical considerations. The age and trauma type of the patients were enlisted in demographics and to measure mindfulness, mindfulness attention awareness scale MAAS was used (Brown & Ryan, 2003). It is a single factor scale with 15 items rated on a 6-point Likert scale (from "almost always" to "almost never"). All items showed a strong relationship to trait awareness. MAAS offers good test-retest reliability and high internal consistency. Now this scale translated and validated by Bakhtiyar et al., (2021) in Pakistan. This scale was developed to measure self-regulation, moment by moment experience and psychological well-being. Translation and validation tests revealed that MAAS for Pakistani adults had a reliability of.86. Confirmatory factor analysis confirmed the scale's overall factor structure, although factor loadings for items 4 and 5 were low, indicating a poor level of self-care and experiential awareness among Pakistanis. Thus, the findings largely validated MAAS as a valid and reliable measure of mindfulness in Pakistan, allowing clinicians and researchers to use it. It has 15 items on 6-point Likert scale from ‘almost never’ to ‘almost always’. Higher score on the scale will indicate higher mindfulness in respondent.

Procedure

The study employed a criterion sampling technique to select participants from the population of individuals diagnosed with Post-Traumatic Stress Disorder (PTSD) by a healthcare professional, aged 19 years and older. Data collection primarily took place in District Gujrat, Pakistan. To identify suitable participants, the researcher visited various hospitals and clinics within District Gujrat. In addition, data collection forms were distributed to ADCP university fellows who were interning at different hospitals. These fellows assisted in collecting data from patients they encountered during their internships, ensuring a broader reach within the defined population. Research objectives, methodology, materials and procedure etc. were permitted by the Advanced Studies and Research Board (A.S.R.B) University of Gujrat, Pakistan Directorate of Research and Research Development Cell (D.R.R.C) University of Gujrat, Pakistan, and Board of Faculties (B.O.F) University of Gujrat, Pakistan. Throughout the research process, four core ethical considerations guided the procedures: respect for individuals' rights and dignity, competence, responsibility, and integrity. Standardized self-report questionnaires were administered to measure mindfulness, psychological distress, and social anxiety among participants. These measures included the Mindfulness Attention Awareness Scale (MAAS), the Psychological Distress Scale for Adults (PDS-A), this scale used after translation in native Urdu language after getting the permissions from corresponding author. After the translation Urdu translated scale was used. For ensuring content validity the translation was done using Lexicon Equivalence by 5 experts. Participants rate each item on a scale ranging from 1 to 5, with higher scores indicating greater effective. After this the translated scale with back translation send to the author for approving translation. According to the author's suggestion final translation was used for data collection. Then the scale validity was confirmed by the correlation. This scale translated for the convenience of participants. And the third scale was Social Interaction Anxiety Scale-6 (SIAS-6) and Social Phobia Scale-6 (SPS-6). Permission for the use of all scales was secured from their respective authors via email prior to data collection. Participants completed these questionnaires either in-person or online, offering flexibility. Before commencing, all participants received both verbal and written explanations regarding the study's purpose. They were explicitly assured of the confidentiality of their personal information, and oral and written informed consent was obtained. Comprehensive guidelines for completing the questionnaires were also provided, and the researcher, or the university fellows assisting with data collection, were present to address any questions or concerns. To uphold confidentiality and ethical standards, all collected surveys were anonymized. The study was conducted in a well-organized and systematic manner. After data collection, all participants were sincerely thanked. Questionnaires were then reviewed to ensure accuracy and thoroughness of completion.

Data Analysis

Descriptive statistics, independent sample t test and one-way ANOVA was used for analysis of data. For statistical analysis was conducted using IBM SPSS version 24.

Results

T-test Table 1 Comparison of Age groups and mindfulness attention awareness among PTSD patients

Age groups	n	M	SD	t	df	p	95%CI
Younger adults	106	25.26	9.20	-2.03*	197.83	.043	[-4.98, -.08]
Older adults	94	28.18	8.39				

Note. MAAS = Mindfulness Attention Awareness Scale. CI = confidence interval. $p < .05$.

The results for comparing mindfulness attention awareness scores between younger adults (19-30 years) and older adults (30 and older) with PTSD indicates that older adults (M = 28.18, SD = 8.39) reported significantly higher mindfulness attention awareness compared to younger adults (M = 25.26, SD = 9.20). This difference was statistically significant, $t(197.83) = -2.03$, $p = .043$, 95% CI for the mean difference = [-4.98, -0.08].

One-way ANOVA

Table 2: Comparison of trauma types and mindfulness attention awareness among PTSD patients

Variable	Death of loved one (n= 64)		Accident (n=40)		Physical violence (n=50)		Others (n=46)		F	P(3,196)	Partial η^2
	M	SD	M	SD	M	SD	M	SD			
Mindfulness	27.45	8.87	26.30	8.53	29.80	8.85	23.24	8.25	4.76	.003	0.068

The results indicate a statistically significant overall effect of trauma type on mindfulness attention awareness, $F(3, 196) = 4.76$, $p = .003$. This significant p-value (less than .05) suggests that the mean mindfulness attention awareness scores are not the same across all four trauma groups at least two of the groups differ significantly from each other, the descriptive statistics for each group reveal the patients who experienced physical violence reported the highest average mindfulness scores, while those categorized under "others" for their trauma type reported the lowest. The effect size, as indicated by Partial Eta Squared ($\eta p2$) = 0.068, suggests a medium effect. This means that approximately 6.8% of the variance in mindfulness attention awareness scores can be explained by the type of trauma experienced.

Discussion:

The analysis of the independent samples t-test finds, older adults have significantly greater mindfulness attention awareness than younger adults. This reflects a reversal in the linear relationship between the age of older adults and their mindfulness impairment due to trauma. This outcome corroborates existing developmental literature on emotion regulation, as it has been observed that older adults tend to engage in more adaptive strategies that allow them to cope with emotional experiences, and that they report being less impacted by post-trauma distress from intrusive memories (Vitulić & Prosen, 2016; Kneeland et al., 2020). Younger adults, on the other hand, are representative of having more emotional reactivity and impulsivity, and an inclination toward maladaptive coping (rumination) strategies (Kneeland et al., 2020; Segal et al., 2002), which mindfulness is intended to address. Thus, older adults' greater MAAS scores likely reflect greater adaptation in emotional regulation and cognitive flexibility that has developed over a lifetime, and represent key components of dispositional mindfulness. The one-way ANOVA analysis also showed a significant overall effect of trauma type on mindfulness attention awareness, with a medium effect size. The descriptive statistics reveal a very specific pattern; individuals who indicated experiencing physical violence had the highest level of mindfulness, followed by death of a loved one, accident-related, and "other," with the lowest mindfulness. This pattern is partially counter-intuitive to some existing literature (Kachadourian et al., 2021). Interpersonal traumas (like physical violence) are generally associated with a higher risk for subsequently developing complex PTSD symptoms and a higher risk for developing emotional regulation and mindfulness deficits at baseline compared to non-interpersonal events like an accident (Williams & Davis, 2018; Fernández-Fillol et al., 2021), yet in the current study's sample of patients with PTSD, the individuals exposed to physical violence had the highest current

mindfulness scores. This finding was not expected and may suggest a few possible considerations (Kachadourian et al., 2021). Those individuals that cope with the complex nature of an interpersonal trauma event, such as physical violence, and remain in treatment, may represent a more resilient subgroup of individuals who have actively cultivated high trait mindfulness to cope with their experience, achieving high MAAS scores with even potential greater amounts of mindfulness than the other trauma type, indicating that mindfulness as a trait could serve as a possible resilience factor (Boyd et al., 2018). The individuals in the study exposed to "physical violence" may represent a chronic, recovered, or treatment engaged group of individuals who have an adaptive coping style indicative of a current baseline capacity for high mindfulness after long term exposure. The other group had lower scores than anticipated. Although this category is diverse, it may hold numerous cases of chronic or repeated trauma (e.g., developmental or cumulative trauma) which can often be difficult to classify and lead to the most significant disruption in attentional control and present-moment awareness (Keng et al., 2011; Hameed et al., 2020). In conclusion, our findings support the notion that mindfulness can be delivered in a more personal, age-sensitive, trauma-informed manner. Despite greater resources for coping from dispositional mindfulness, older adults may benefit from less intensive, more basic mindfulness training. The younger group and non-specific, chronically traumatized cases may need greater mindfulness training depth and intensity to provide some counterbalance to the disruption of attentional control and present-moment awareness caused by habitual trauma response (Williams & Davis, 2018).

Conclusion

In conclusion, two important facets of mindfulness in PTSD patients were identified by this study: First, older individuals with PTSD tend to be more aware than younger ones. This suggests that people may naturally get more adept at living in the present as they age, even when dealing with the aftermath of trauma. Second, the type of trauma experienced affects their degree of mindfulness. The most aware people were those who had been physically abused, while the least mindful people were those whose trauma was categorized as others. This suggests that the specific kind of difficult event a person has experienced can have an impact on their degree of awareness and present.

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