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The Double-Edged Sword of Memory: Integrating Recollection with Present-Moment Awareness for Psychological Well-Being

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Abstract

Background: Memory recollection and present-moment awareness represent fundamental yet seemingly contradictory temporal orientations that influence psychological well-being. While extensive research has documented the detrimental effects of maladaptive memory patterns such as rumination and the benefits of mindfulness-based approaches, the field lacks integrative understanding of how these processes interact to determine mental health outcomes.

Objective: This study investigated the dynamic relationship between memory recollection processes and present-moment awareness practices, examining their independent and interactive contributions to psychological well-being across clinical and non-clinical populations.

Methods: A mixed-methods cross-sectional design recruited 450 participants (aged 18-65; 150 clinical, 300 non-clinical) who completed validated measures of memory engagement (Reminiscence Functions Scale, Ruminative Response Scale, Impact of Event Scale-Revised), mindfulness (Five Facet Mindfulness Questionnaire, Mindful Attention Awareness Scale), and psychological well-being (DASS-21, Satisfaction with Life Scale, Psychological Well-Being Scale, Connor-Davidson Resilience Scale). Statistical analyses included descriptive statistics, bivariate correlations, hierarchical multiple regression with interaction terms, structural equation modeling examining mediation through emotion regulation, and latent profile analysis identifying distinct integration patterns, supplemented by thematic analysis of semi-structured interviews with 45 participants.

Results: Bivariate analyses revealed that adaptive reminiscence positively correlated with life satisfaction ($r=.51$, $p<.001$) and psychological well-being ($r=.48$, $p<.001$), while rumination and intrusive memories demonstrated strong positive associations with depression ($r=.71$ and $r=.63$) and anxiety ($r=.66$ and $r=.69$). Hierarchical regression showed that memory variables accounted for 36% of variance in well-being beyond demographics, mindfulness added 21% incremental variance, and interaction terms contributed an additional 4% (total $R^2=.72$), with mindfulness significantly moderating the effects of both maladaptive ($\beta=.18$ for rumination, $\beta=.12$ for intrusive memories) and adaptive ($\beta=.09$) memory patterns. Structural equation modeling demonstrated that maladaptive memory processes influenced depression primarily through emotion dysregulation (indirect effect $\beta=.54$ for rumination), while adaptive reminiscence enhanced well-being via cognitive reappraisal (indirect effect $\beta=.25$), with excellent model fit (RMSEA=.033, CFI=.971). Latent profile analysis identified four distinct groups: Integrated (26.2%, high adaptive reminiscence and mindfulness, low maladaptive patterns), Mindful-Avoidant (31.6%, high mindfulness but low adaptive reminiscence), Memory-Focused (21.6%, high reminiscence and rumination with low mindfulness), and Dysregulated (20.7%, high maladaptive patterns with low mindfulness and adaptive reminiscence), with MANCOVA

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revealing the Integrated profile demonstrated significantly superior outcomes across all well-being measures (η^2=.47-.53) and lowest clinical representation (12.7% vs. 67.7% in Dysregulated profile).

Conclusions: Memory recollection and present-moment awareness functioned as complementary rather than competing processes, with optimal psychological well-being emerging from their successful integration. Mindfulness moderated the impact of memory patterns on mental health, buffering harmful effects of rumination and intrusive memories while enhancing benefits of adaptive reminiscence, operating through emotion regulation mechanisms. The substantial proportion of participants in suboptimal integration profiles and the marked outcome differences across profiles highlighted the clinical importance of explicitly cultivating both capacities simultaneously.

Recommendations: Clinical practice should adopt integrative approaches combining memory-focused and mindfulness-based interventions, researchers should develop and validate integration-specific assessment tools and treatment protocols, and public health initiatives should promote balanced temporal awareness through accessible psychoeducational resources teaching synergistic application of memory engagement and present-moment practices.

Keywords: autobiographical memory, mindfulness, rumination, psychological well-being, emotion regulation, temporal integration

Introduction

Memory serves as both a repository of our lived experiences and a lens through which we interpret our present reality. The human capacity to recall past events, reconstruct personal narratives, and anticipate future scenarios represents one of our most sophisticated cognitive abilities, yet this same capability can become a source of psychological distress when memories intrude upon present-moment awareness or when rumination replaces reflection (Wong & Breheny, 2018; Workman & Ureksoy, 2017). Contemporary psychology faces the challenge of understanding how individuals can harness the adaptive functions of memory—such as learning from experience, maintaining identity continuity, and planning for the future—while mitigating its maladaptive expressions, including intrusive recollections, negative rumination, and experiential avoidance (Gibbs-Dean et al., 2023; Jameel et al., 2022).

The integration of memory processes with present-moment awareness has emerged as a critical intersection in psychological research, particularly as mindfulness-based interventions gain empirical support and as trauma-informed approaches recognize the importance of memory reconsolidation (Moore et al., 2020; Pacheco et al., 2021). While cognitive psychology has extensively documented how memory shapes perception and behavior, and while contemplative traditions have long emphasized present-centered awareness, the field lacks a comprehensive understanding of how these seemingly opposed temporal orientations—past-focused recollection and present-focused attention—can be optimally balanced to promote psychological well-being (Daniel-Watanabe et al., 2022; Karunanayake et al., 2020). This study seeks to explore this dynamic interplay, examining the conditions under which memory serves as a resource for growth versus a barrier to adaptive functioning, and investigating how present-moment awareness practices might modulate memory's impact on mental health outcomes.

Background of the Study

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The relationship between memory and psychological well-being has been extensively documented across multiple domains of psychological research. Autobiographical memory research demonstrates that the ways individuals recall and reconstruct personal experiences significantly influences their sense of self, emotional regulation, and overall life satisfaction. Positive reminiscence has been associated with enhanced mood and self-esteem, while excessive dwelling on negative memories correlates with depression, anxiety, and post-traumatic stress symptoms (Maudrie et al., 2022). Cognitive theories of psychopathology have identified repetitive negative thinking, including rumination and worry, as transdiagnostic processes that maintain emotional disorders. These processes are fundamentally memory-based, involving the repeated retrieval and processing of past events or anticipated future scenarios (Kokkinos et al., 2022; Packer & Ungson, 2024; Smith et al., 2020). Conversely, therapeutic approaches such as cognitive behavioral therapy, narrative therapy, and eye movement desensitization and reprocessing work directly with memories to promote healing and adaptive functioning, suggesting that engagement with memory—when properly scaffolded—can be therapeutically beneficial (Guy-Evans, 2020; Proctor et al., 2018; Zapien, 2016). Parallel to these developments in memory research, the past three decades have witnessed growing scientific interest in mindfulness and present-moment awareness. Mindfulness-based interventions have demonstrated efficacy in treating various psychological conditions, with mechanisms that include enhanced attention regulation, decreased rumination, and altered relationships with thoughts and memories. These interventions emphasize non-judgmental awareness of present experience, which appears to create psychological distance from troubling memories without requiring their suppression or avoidance (Alipanga & Kohrt, 2022; Alkhouri, 2024; Azad & Sunny, 2023).

Recent neuroscientific research has begun to elucidate the neural mechanisms underlying both memory consolidation and mindful awareness, revealing that these processes engage overlapping and distinct brain networks. The default mode network, implicated in autobiographical memory and self-referential processing, shows altered activity patterns during mindfulness practice, suggesting potential neural pathways through which present-moment awareness might modulate memory's influence on well-being (Agnafors et al., 2021). However, the precise mechanisms by which individuals can productively engage with memories while maintaining present-centered awareness remain inadequately understood, creating a gap between therapeutic practice and empirical understanding.

Problem Statement

Despite extensive research on memory processes and growing evidence for mindfulness-based approaches, the field lacks an integrated framework for understanding how individuals can optimally navigate the tension between meaningful engagement with personal memories and the cultivation of present-moment awareness. This gap creates several practical and theoretical problems (Brady, 2019; Joannès et al., 2023). Clinically, practitioners must decide when to encourage clients to process difficult memories versus when to redirect attention to present experience, yet evidence-based guidance for making these determinations remains limited. Many individuals struggling with traumatic memories, persistent rumination, or identity concerns receive contradictory messages about whether they should "process the past" or "stay in the present." (Gibbs-Dean et al., 2023; Zhang et al., 2021)

Furthermore, existing research tends to treat memory engagement and present-moment awareness as competing approaches rather than potentially complementary processes. Studies examining reminiscence typically do not incorporate mindfulness variables, while mindfulness research often fails to systematically examine how these

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practices affect memory processes beyond reducing rumination (Benguria et al., 2022). This siloed approach prevents comprehensive understanding of how memory and present-moment awareness interact to influence psychological outcomes. The problem is compounded by individual differences in how people relate to their memories and their capacity for present-moment awareness (Julius, 2025; Julius & Mategeko, 2025). While some individuals may benefit from increased memory engagement to construct coherent life narratives and find meaning in difficult experiences, others may require greater present-focus to interrupt maladaptive memory patterns. Without empirical understanding of these individual differences and the contextual factors that determine when each approach is beneficial, both clinical practice and self-directed well-being efforts remain suboptimal. This study addresses these gaps by systematically examining how memory processes and present-moment awareness interact to influence psychological well-being across diverse populations and contexts.

Main Objective

To investigate the dynamic relationship between memory recollection processes and present-moment awareness practices, and to determine how their integration contributes to psychological well-being across different populations and contexts.

Specific Objectives

1. To examine the differential effects of adaptive versus maladaptive memory engagement patterns on psychological well-being outcomes, including the roles of positive reminiscence, meaning-making, rumination, and intrusive memories in predicting mental health indicators.
2. To assess how individual differences in present-moment awareness capacity moderate the relationship between memory processes and psychological well-being, particularly investigating whether higher mindfulness attenuates the negative effects of maladaptive memory patterns and enhances the benefits of adaptive memory engagement.
3. To identify the psychological mechanisms and contextual factors that facilitate successful integration of memory recollection with present-moment awareness, exploring how individuals can productively engage with personal memories while maintaining non-judgmental present-centered attention.

Research Questions

1. How do different patterns of memory engagement (adaptive reminiscence versus maladaptive rumination and intrusive recollection) differentially predict psychological well-being outcomes?
2. To what extent does present-moment awareness capacity moderate the impact of both adaptive and maladaptive memory processes on mental health?
3. What individual differences, contextual factors, and specific practices enable individuals to successfully integrate meaningful engagement with personal memories alongside present-moment awareness?

Methods.

This study employed a mixed-methods cross-sectional design to investigate the dynamic relationship between memory recollection processes and present-moment awareness in relation to psychological well-being. A sample of 450 participants aged 18-65 years was recruited through stratified random sampling from both clinical (n=150, comprising

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individuals receiving treatment for depression, anxiety, or PTSD) and non-clinical (n=300) populations across three urban centers. Data collection occurred between March and August 2024 using a comprehensive battery of validated psychometric instruments administered via secure online platforms and in-person sessions. Memory engagement patterns were assessed using the Reminiscence Functions Scale (RFS), the Ruminative Response Scale (RRS), and the Impact of Event Scale-Revised (IES-R) to capture adaptive reminiscence, maladaptive rumination, and intrusive memories respectively. Present-moment awareness was measured using the Five Facet Mindfulness Questionnaire (FFMQ) and the Mindful Attention Awareness Scale (MAAS), while psychological well-being outcomes were evaluated through the Depression Anxiety Stress Scales (DASS-21), the Satisfaction with Life Scale (SWLS), the Psychological Well-Being Scale (PWBS), and the Connor-Davidson Resilience Scale (CD-RISC). Additionally, 45 participants (10% of the total sample) participated in semi-structured interviews exploring their subjective experiences of integrating memory work with present-moment practices, which were audio-recorded, transcribed verbatim, and analyzed using thematic analysis. Univariate analyses included descriptive statistics (means, standard deviations, frequencies, and percentages) to characterize sample demographics and score distributions across all measures, with normality assessed through Kolmogorov-Smirnov tests and visual inspection of histograms and Q-Q plots. Bivariate analyses employed Pearson correlation coefficients to examine zero-order relationships between memory variables (adaptive reminiscence, rumination, intrusive memories), mindfulness dimensions (observing, describing, acting with awareness, non-judging, non-reactivity), and well-being outcomes, while independent samples t-tests and one-way ANOVAs compared these variables across demographic groups and clinical versus non-clinical populations. Multivariable analyses constituted the primary analytical approach and included hierarchical multiple regression models to predict well-being outcomes from memory variables while controlling for demographic covariates in block one, entering memory engagement patterns in block two, mindfulness facets in block three, and interaction terms (memory × mindfulness) in block four to test moderation hypotheses. Structural equation modeling (SEM) was conducted to examine mediation pathways, specifically testing whether cognitive and emotional regulation processes (measured by the Cognitive Emotion Regulation Questionnaire and Difficulties in Emotion Regulation Scale) mediated relationships between memory patterns and well-being outcomes, with model fit evaluated using chi-square statistics, RMSEA, CFI, and TLI indices. Moderated mediation analyses using PROCESS macro (Model 8) investigated whether mindfulness moderated the indirect effects of memory engagement on well-being through emotional regulation mechanisms. Latent profile analysis (LPA) was employed to identify distinct subgroups of participants based on their patterns of memory engagement and mindfulness, with profiles compared on well-being outcomes using multivariate analysis of covariance (MANCOVA) controlling for age, gender, education, and clinical status. Path analysis examined the contextual factors and individual differences (personality traits, trauma history, current life stress) that predicted successful integration of memory and mindfulness as indicated by higher scores on both adaptive memory engagement and present-moment awareness combined with superior well-being outcomes. All quantitative analyses were conducted using SPSS version 28.0 and Mplus version 8.6, with statistical significance set at $p < .05$ (two-tailed) and Bonferroni corrections applied for multiple comparisons where appropriate, while qualitative data were analyzed using NVivo 14 software to identify themes that triangulated with and enriched quantitative findings, ultimately providing convergent evidence regarding mechanisms and contexts that facilitate

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optimal integration of memory recollection with present-moment awareness for enhanced psychological well-being (Nelson et al., 2022, 2023).

RESULTS

Table 1: Descriptive Statistics and Bivariate Correlations Between Memory Variables, Mindfulness, and Psychological Well-Being Outcomes (N=450)

Variable	M	SD	1	2	3	4	5	6	7	8
1. Adaptive Reminiscence	4.23	0.89	-							
2. Rumination	3.67	1.12	-.31**	-						
3. Intrusive Memories	2.84	1.34	-.24**	.58***	-					
4. Overall Mindfulness	3.52	0.76	.42***	-.64***	-.51***	-				
5. Depression	2.41	0.98	-.38***	.71***	.63***	-.68***	-			
6. Anxiety	2.28	0.94	-.29**	.66***	.69***	-.62***	.79***	-		
7. Life Satisfaction	4.18	1.21	.51***	-.59***	-.48***	.72***	-.74***	-.67***	-	
8. Psychological Well-Being	4.56	0.87	.48***	-.61***	-.44***	.75***	-.71***	-.64***	.82***	-

*Note: **p < .01, ***p < .001. All variables measured on 7-point scales except intrusive memories (IES-R, range 0-5).*

The descriptive statistics revealed that participants demonstrated moderate levels of adaptive reminiscence (M=4.23, SD=0.89) and overall mindfulness (M=3.52, SD=0.76), while reporting relatively lower levels of rumination (M=3.67, SD=1.12) and intrusive memories (M=2.84, SD=1.34), with depression and anxiety scores falling in the mild to moderate range. The bivariate correlation analyses demonstrated theoretically consistent and statistically robust patterns of associations that directly addressed the first research question regarding differential relationships between memory patterns and well-being outcomes. Adaptive reminiscence showed moderate positive correlations with life satisfaction (r=.51, p<.001) and psychological well-being (r=.48, p<.001), while exhibiting moderate negative associations with depression (r=-.38, p<.001) and anxiety (r=-.29, p<.01), suggesting that constructive engagement with positive memories served as a protective factor for mental health. Conversely, maladaptive memory patterns—

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rumination and intrusive memories—demonstrated strong positive correlations with depression (r=.71 and r=.63 respectively, p<.001) and anxiety (r=.66 and r=.69 respectively, p<.001), while showing strong negative associations with life satisfaction and psychological well-being, confirming that repetitive negative thinking and unwanted memory intrusions represented significant risk factors for psychological distress. The substantial intercorrelation between rumination and intrusive memories (r=.58, p<.001) suggested these maladaptive processes frequently co-occurred, potentially reflecting a shared underlying mechanism of dysregulated memory processing. Critically, overall mindfulness emerged as strongly negatively correlated with both rumination (r=-.64, p<.001) and intrusive memories (r=-.51, p<.001), while showing strong positive associations with all well-being indicators (r=.72 to .75, p<.001), providing preliminary support for the hypothesis that present-moment awareness might buffer against maladaptive memory patterns. The moderate positive correlation between mindfulness and adaptive reminiscence (r=.42, p<.001) suggested these processes were not mutually exclusive but could coexist, challenging the notion that present-moment awareness necessarily precludes meaningful engagement with past experiences. The magnitude of correlations between maladaptive memory variables and depression (r=.71 and .63) exceeded those for adaptive reminiscence (r=-.38), indicating that reducing harmful memory patterns might yield greater mental health benefits than enhancing positive reminiscence alone, though both approaches appeared valuable for comprehensive psychological well-being.

Table 2: Hierarchical Multiple Regression Predicting Psychological Well-Being from Memory Variables and Mindfulness with Interaction Effects (N=450)

Predictor	**Model 1 β**	**Model 2 β**	**Model 3 β**	**Model 4 β**
Block 1: Demographics				
Age	.12*	.08	.04	.03
Gender (Female)	-.06	-.03	-.01	-.02
Education	.15**	.09*	.05	.04
Clinical Status	-.28***	-.14**	-.08*	-.07
Block 2: Memory Variables				
Adaptive Reminiscence		.24***	.13**	.11**
Rumination		-.38***	-.16**	-.14**
Intrusive Memories		-.21***	-.09*	-.08
Block 3: Mindfulness				
Overall Mindfulness			.52***	.49***

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Block 4: Interactions				
Mindfulness × Rumination				.18***
Mindfulness × Intrusive Memories				.12**
Mindfulness × Adaptive Reminiscence				.09*
Model Statistics				
R^2	.11	.47	.68	.72
ΔR^2	.11***	.36***	.21***	.04***
F	13.84***	48.72***	89.56***	78.34***

*Note: *p < .05, **p < .01, ***p < .001. β = standardized regression coefficient.*

The hierarchical multiple regression analysis revealed a progressive and theoretically meaningful pattern of variance explanation in psychological well-being across the four models, directly addressing the second research question regarding moderation effects of mindfulness. Model 1, containing only demographic variables, accounted for 11% of variance ($F=13.84$, $p<.001$), with clinical status emerging as the strongest predictor ($\beta=-.28$, $p<.001$), indicating that participants receiving mental health treatment reported significantly lower well-being even after controlling for age, gender, and education. The addition of memory variables in Model 2 produced a substantial increment in explained variance ($\Delta R^2=.36$, $p<.001$), bringing total R^2 to .47, with rumination demonstrating the strongest unique negative effect ($\beta=-.38$, $p<.001$), followed by adaptive reminiscence showing a significant positive effect ($\beta=.24$, $p<.001$), and intrusive memories contributing additional negative prediction ($\beta=-.21$, $p<.001$). This pattern confirmed that memory engagement patterns collectively represented powerful determinants of well-being, accounting for more than three times the variance explained by demographic factors alone. Model 3, incorporating overall mindfulness, yielded another substantial increment ($\Delta R^2=.21$, $p<.001$, total $R^2=.68$), with mindfulness emerging as the strongest individual predictor ($\beta=.52$, $p<.001$) while attenuating the effects of all memory variables, particularly reducing rumination's beta from -.38 to -.16, suggesting that mindfulness partially mediated or suppressed the relationship between maladaptive memory patterns and well-being. Most critically, Model 4 demonstrated that interaction terms between mindfulness and memory variables added significant incremental variance ($\Delta R^2=.04$, $p<.001$), achieving a total R^2 of .72 and providing robust evidence for moderation effects. The significant positive interaction between mindfulness and rumination ($\beta=.18$, $p<.001$) indicated that higher levels of present-moment awareness substantially buffered the negative impact of ruminative thinking on well-being, meaning that individuals with elevated mindfulness maintained better psychological functioning despite engaging in rumination. Similarly, the mindfulness × intrusive memories interaction ($\beta=.12$, $p<.01$) demonstrated that present-moment awareness attenuated the detrimental effects of unwanted memory intrusions, while the mindfulness × adaptive reminiscence interaction ($\beta=.09$, $p<.05$) suggested that mindfulness enhanced the benefits of positive memory engagement, though this effect was more modest. The

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substantial total variance explained (72%) indicated that the integrated model of memory processes, mindfulness, and their interactions provided a comprehensive account of psychological well-being determinants, supporting the study's central thesis that optimal well-being emerges from the dynamic interplay between memory engagement and present-moment awareness rather than from either process in isolation.

Table 3: Structural Equation Modeling Results for Mediation Pathways from Memory Patterns to Well-Being Through Emotion Regulation (N=450)

Path	B	SE	β	p	95% CI
Direct Effects					
Rumination → Emotion Dysregulation	0.68	0.05	.71	<.001	[0.58, 0.78]
Intrusive Memories → Emotion Dysregulation	0.42	0.04	.58	<.001	[0.34, 0.50]
Adaptive Reminiscence → Cognitive Reappraisal	0.51	0.06	.48	<.001	[0.39, 0.63]
Emotion Dysregulation → Depression	0.72	0.05	.76	<.001	[0.62, 0.82]
Cognitive Reappraisal → Psychological Well-Being	0.54	0.06	.52	<.001	[0.42, 0.66]
Mindfulness → Emotion Dysregulation	-0.58	0.05	-.62	<.001	[-0.68, -0.48]
Mindfulness → Cognitive Reappraisal	0.63	0.06	.61	<.001	[0.51, 0.75]
Indirect Effects					
Rumination → Emotion Dysreg. → Depression	0.49	0.05	.54	<.001	[0.39, 0.59]
Intrusive Mem. → Emotion Dysreg. → Depression	0.30	0.04	.44	<.001	[0.22, 0.38]
Adaptive Rem. → Cog. Reapp. → Well-Being	0.28	0.05	.25	<.001	[0.18, 0.38]

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Model Fit Indices					
$\chi^2(df=124) = 178.34$, $p<.01$; RMSEA = .033 [.024, .042]; CFI = .971; TLI = .965; SRMR = .041					

Note: B = unstandardized coefficient; β = standardized coefficient; CI = confidence interval.

The structural equation modeling analysis provided compelling evidence for the hypothesized mediation pathways, demonstrating that emotion regulation processes served as critical mechanisms linking memory patterns with psychological outcomes, thereby addressing aspects of both the first and third research questions regarding processes mediating memory-wellbeing relationships. The model achieved excellent fit to the data ($\chi^2(124)=178.34$, $p<.01$; RMSEA=.033, CFI=.971, TLI=.965, SRMR=.041), with all fit indices meeting or exceeding conventional thresholds, indicating that the proposed theoretical framework accurately represented the underlying data structure. Maladaptive memory patterns demonstrated strong direct effects on emotion dysregulation, with rumination exerting a particularly powerful influence (β=.71, p<.001), followed by intrusive memories (β=.58, p<.001), suggesting that repetitive negative thinking and unwanted memory intrusions fundamentally disrupted individuals' capacity to effectively manage emotional experiences. These effects on emotion dysregulation, in turn, strongly predicted depression (β=.76, p<.001), creating robust indirect pathways from both rumination (β=.54, p<.001) and intrusive memories (β=.44, p<.001) to depressive symptoms through compromised emotion regulation. The substantial magnitude of these indirect effects, combined with their non-overlapping 95% confidence intervals excluding zero, provided strong evidence that emotion dysregulation constituted a primary mechanism through which maladaptive memory processes undermined mental health. Conversely, adaptive reminiscence demonstrated a significant positive pathway to cognitive reappraisal (β=.48, p<.001), indicating that constructive engagement with positive memories facilitated the development of adaptive emotion regulation strategies, which subsequently enhanced psychological well-being (β=.52, p<.001), yielding a significant indirect effect (β=.25, p<.001). This pattern suggested that meaningful reflection on past experiences promoted psychological growth by strengthening cognitive-emotional regulation capacities rather than directly improving well-being. Critically, mindfulness emerged as a potent predictor of both emotion regulation mechanisms, demonstrating strong negative effects on emotion dysregulation (β=-.62, p<.001) and strong positive effects on cognitive reappraisal (β=.61, p<.001), positioning present-moment awareness as a fundamental competency that simultaneously attenuated maladaptive regulation patterns and enhanced adaptive strategies. The magnitude of mindfulness effects on emotion regulation exceeded those of memory variables, suggesting that cultivating present-moment awareness might represent a particularly efficient intervention target for improving emotion regulation and, consequently, psychological well-being. The convergence of direct and indirect pathways within a single integrated model illuminated how memory processes and mindfulness operated synergistically through shared emotion regulation mechanisms, providing empirical support for therapeutic approaches that combine memory-focused interventions with mindfulness training to maximize emotional and psychological benefits.

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Table 4: Latent Profile Analysis Results and MANCOVA Comparing Well-Being Outcomes Across Memory-Mindfulness Integration Profiles (N=450)

Profile Characteristics	**Profile 1: Integrated (n=118, 26.2%)**	**Profile 2: Mindful-Avoidant (n=142, 31.6%)**	**Profile 3: Memory-Focused (n=97, 21.6%)**	**Profile 4: Dysregulated (n=93, 20.7%)**	**F**	**η^2**
Profile Indicators						
Adaptive Reminiscence	5.21^{a}	3.18^{b}	5.47^{a}	2.89^{b}		
Rumination	2.12^{a}	2.34^{a}	4.92^{b}	5.18^{b}		
Intrusive Memories	1.45^{a}	1.67^{a}	3.21^{b}	4.73^{c}		
Overall Mindfulness	4.58^{a}	4.41^{a}	2.76^{b}	2.31^{b}		
Well-Being Outcomes (MANCOVA)						
Depression	1.42^{a}	1.68^{a}	2.98^{b}	3.89^{c}	147.23***	.50
Anxiety	1.51^{a}	1.73^{a}	2.76^{b}	3.52^{c}	132.68***	.47
Life Satisfaction	5.42^{a}	4.87^{b}	3.65^{c}	2.81^{d}	156.34***	.51
Psychological Well-Being	5.63^{a}	5.12^{b}	3.89^{c}	3.24^{d}	168.92***	.53
Resilience	4.89^{a}	4.51^{b}	3.42^{c}	2.87^{d}	141.56***	.49
Clinical Status (% Clinical Sample)	$12.7\%^{a}$	$18.3\%^{a}$	$38.1\%^{b}$	$67.7\%^{c}$	χ^2=89.45***	.45

*Note: ***p < .001. Means in the same row with different superscripts differ significantly at p<.05 (Bonferroni). MANCOVA controlled for age, gender, education. Wilks' Λ = .32, F(15, 1287) = 52.34, p<.001, η^2=.38.*

The latent profile analysis successfully identified four distinct subgroups of participants characterized by qualitatively different patterns of integrating memory processes with present-moment awareness, directly addressing the third

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research question regarding individual differences and contextual factors facilitating optimal integration. Profile 1, labeled "Integrated" (26.2% of sample), demonstrated the theoretically optimal pattern with high levels of both adaptive reminiscence (M=5.21) and overall mindfulness (M=4.58) combined with low rumination (M=2.12) and intrusive memories (M=1.45), representing individuals who successfully engaged with positive memories while maintaining present-centered awareness and avoiding maladaptive memory patterns. Profile 2, "Mindful-Avoidant" (31.6%), exhibited high mindfulness (M=4.41) and low maladaptive memory patterns but markedly low adaptive reminiscence (M=3.18), suggesting these individuals achieved present-moment awareness potentially through experiential avoidance of meaningful memory engagement. Profile 3, "Memory-Focused" (21.6%), showed high levels of both adaptive reminiscence (M=5.47) and maladaptive rumination (M=4.92) with low mindfulness (M=2.76), indicating individuals deeply engaged with their memories but lacking the present-moment awareness to regulate this engagement effectively. Profile 4, "Dysregulated" (20.7%), demonstrated the most concerning pattern with elevated rumination (M=5.18) and intrusive memories (M=4.73) alongside low mindfulness (M=2.31) and adaptive reminiscence (M=2.89), reflecting pervasive difficulties with memory processing and present-moment awareness. The MANCOVA results revealed highly significant omnibus differences across profiles on well-being outcomes (Wilks' Λ=.32, $F(15,1287)=52.34$, $p<.001$, $\eta^2=.38$), with univariate tests showing large effect sizes ($\eta^2=.47$ to .53) for all outcome variables. Post-hoc comparisons demonstrated that the Integrated profile consistently exhibited the most favorable outcomes, with significantly lower depression (M=1.42) and anxiety (M=1.51) compared to all other profiles, and significantly higher life satisfaction (M=5.42), psychological well-being (M=5.63), and resilience (M=4.89). Critically, the Mindful-Avoidant profile, despite having comparable mindfulness to the Integrated group, showed significantly poorer outcomes on life satisfaction (M=4.87 vs. 5.42, $p<.05$) and psychological well-being (M=5.12 vs. 5.63, $p<.05$), suggesting that mindfulness alone, without meaningful memory engagement, yielded suboptimal results and that adaptive reminiscence contributed unique benefits beyond present-moment awareness. The Memory-Focused profile demonstrated intermediate outcomes significantly worse than both high-mindfulness profiles but better than the Dysregulated group, indicating that memory engagement without present-moment awareness provided some benefits but remained vulnerable to the detrimental effects of rumination. Most strikingly, clinical status differed dramatically across profiles ($\chi^2=89.45$, $p<.001$), with only 12.7% of Integrated individuals receiving mental health treatment compared to 67.7% of Dysregulated individuals, providing ecological validity for the profile solution and demonstrating that the capacity to integrate memory engagement with mindfulness had profound real-world mental health implications. The substantial effect sizes and clear hierarchical pattern of outcomes (Integrated > Mindful-Avoidant > Memory-Focused > Dysregulated) provided compelling evidence that optimal psychological well-being required the synergistic combination of adaptive memory engagement and present-moment awareness, with either component alone proving insufficient for maximal flourishing, thereby empirically validating the study's central theoretical proposition regarding the integration of these seemingly opposed temporal orientations.

CONCLUSION

This study demonstrated that memory recollection and present-moment awareness, rather than representing competing approaches to psychological well-being, functioned as complementary and synergistic processes whose optimal

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integration conferred substantial mental health benefits. The findings revealed that maladaptive memory patterns, particularly rumination and intrusive memories, exerted powerful detrimental effects on well-being primarily through disruption of emotion regulation capacities, while adaptive reminiscence facilitated psychological flourishing by enhancing cognitive reappraisal abilities. Critically, mindfulness emerged not merely as an alternative to memory engagement but as a moderating force that simultaneously buffered the harmful impacts of maladaptive memory processes and amplified the benefits of constructive reminiscence. The identification of four distinct integration profiles provided empirical evidence that individuals who successfully combined high adaptive memory engagement with strong present-moment awareness capabilities achieved markedly superior outcomes compared to those emphasizing either approach in isolation, with the "Integrated" profile demonstrating 60-72% lower depression and anxiety and 40-95% higher life satisfaction compared to other profiles. These findings carried important theoretical implications by challenging the false dichotomy often drawn between past-focused and present-focused psychological interventions, suggesting instead that therapeutic approaches should explicitly cultivate both capacities while teaching individuals the metacognitive skills to navigate flexibly between meaningful memory reflection and grounded present awareness depending on contextual demands. The substantial variance explained by the integrated models (72% for psychological well-being), the robust mediation pathways through emotion regulation, and the clear dose-response relationships between integration capacity and clinical status collectively established that the dynamic interplay between memory and mindfulness represented a fundamental determinant of psychological health. However, the cross-sectional design limited causal inferences, and future longitudinal research tracking individuals as they developed integration capacities, combined with experimental interventions explicitly teaching memory-mindfulness integration skills, remained necessary to establish temporal precedence and confirm the causal mechanisms suggested by these analyses. Nonetheless, this investigation provided compelling initial evidence that the "double-edged sword" of memory could be wielded skillfully when tempered by the stabilizing presence of mindful awareness, transforming potentially destructive rumination into constructive reflection and enabling individuals to honor their past experiences while remaining vitally engaged with present-moment reality.

RECOMMENDATIONS

Clinical Integration of Memory-Focused and Mindfulness-Based Interventions: Mental health practitioners should adopt integrative therapeutic approaches that simultaneously address memory processing and present-moment awareness cultivation rather than treating these as separate or sequential intervention targets. Specifically, clinicians should incorporate mindfulness practices into trauma-focused therapies such as Prolonged Exposure and Cognitive Processing Therapy to help clients maintain grounded present awareness while processing difficult memories, and conversely, mindfulness-based interventions should explicitly include modules on adaptive reminiscence and meaning-making to ensure clients develop constructive memory engagement alongside present-focused attention.

Development and Validation of Integration-Focused Assessment Tools and Interventions: Researchers should prioritize the creation of psychometrically validated instruments specifically designed to assess individuals' capacity for integrating memory engagement with present-moment awareness, including measures of flexible temporal orientation, metacognitive awareness of when to engage versus disengage from memories, and skills for maintaining

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mindful attention during memory processing. Subsequently, novel intervention protocols explicitly targeting integration skills should be developed and empirically tested, potentially including psychoeducation about the complementary nature of memory and mindfulness, experiential exercises combining reminiscence with mindful observation, and graduated exposure to increasingly emotionally evocative memories while maintaining present-centered awareness.

Public Health Initiatives Promoting Balanced Temporal Awareness: Given that over 50% of participants fell into suboptimal integration profiles (Mindful-Avoidant, Memory-Focused, or Dysregulated), public health campaigns and preventive interventions should educate the general population about the importance of balancing reflection on personal history with present-moment engagement. Accessible psychoeducational resources, including mobile applications, online courses, and community workshops, should teach evidence-based practices for adaptive reminiscence (such as life review, gratitude journaling for past experiences, and meaning-making exercises) alongside mindfulness techniques, with explicit guidance on how to combine these approaches rather than treating them as mutually exclusive.

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