



**EXAMINING THE MEDIATING AND MODERATING ROLES OF MALADAPTIVE
DAYDREAMING ON ADVERSE CHILDHOOD EXPERIENCES AND POST-
TRAUMATIC GROWTH**

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Abstract

The current research aimed to investigate the mediating and moderating roles of Maladaptive Daydreaming on Adverse childhood experiences and Post-Traumatic Growth. Grounded in theories such as The Transactional Theory of stress and coping, the adverse childhood experiences (ACEs), encompassing trauma like abuse or neglect, can contribute to maladaptive daydreaming as a coping mechanism (Somer et al., 2020). ACEs can also lead to maladaptive coping styles, such as avoidance or substance abuse, which persists into adulthood. The proposed study involves a sample of 100 participants ranging from 18-35 years of age. Participants were administered standardized questionnaires assessing Adverse Childhood Experiences International questionnaire (ACE-IQ), Maladaptive Daydreaming Scale – 16 (MDS-16), and Post-Traumatic Growth Inventory (PTGI). Statistical analyses, including

correlational analysis, mediation and moderation analysis, were conducted to explore the complex interplay between these variables. This study uncovers intricate links between family structure, ACEs, MD, and PTG. While certain family types may increase risks of ACEs and MD, they may also promote aspects of PTG. The results suggest that maladaptive daydreaming may have both mediating and moderating effects, particularly on spiritual growth and appreciation for life. MD plays complex mediating and moderating roles between ACEs and PTG, highlighting the need for nuanced approaches in addressing childhood adversity's long-term psychological impacts.

Keywords: *Adverse childhood experiences, Post-traumatic growth, Maladaptive daydreaming, Resilience*

1. Introduction

1.1 Definition and background of Adverse Childhood experiences

Adverse Childhood Experiences (ACEs) are traumatic experiences or circumstances experienced during childhood and can have serious consequences for the well-being and health of an individual later on in life. These experiences were initially extensively investigated in a large-scale study conducted by the CDC-Kaiser in 1998, which discovered strong links between ACEs and a variety of health outcomes, like both mental and physical health problems. Since then, there has been an increased interest in understanding how ACEs influence behaviour, life opportunities, and financial stability. ACEs are now recognized as significant risk factors for health, alongside well-known risk factors such as smoking. The majority of ACE research has been carried out in high-income countries, but there is a growing recognition of the importance of gathering data from low- and middle-income countries in order to better comprehend the global impact of ACEs on the health of the general population. To address this, the World Health Organization (WHO) developed the Adverse Childhood Experiences International Questionnaire (ACE-IQ). This questionnaire asks not only the standard ACE

questions, but also about exposure to war, peer violence, community violence, and collective violence. The goal is to improve our knowledge of ACEs and their impact on global health.

ACEs are common. According to the original CDC-Kaiser ACE study, 12.5% of respondents had four or more ACEs, while 64% had at least one. In a 2015 survey of 2028 adults in Wales, 47% reported experiencing at least one ACE, with 14% experiencing four or more. Other UK studies have reported a prevalence of 9-14% for 4 or more ACEs.

1.2 Maladaptive Daydreaming and its link to Childhood Experiences

Maladaptive daydreaming (MD) is a compulsive mental habit that involves vivid and absorptive imaginings. The intense fantasy activity found in MD typically involves complex functions like learning, work, and relationships (Schimmenti, Somer, et al., 2019). Individuals with MD often find that engaging with evocative music and carrying out stereotypical movements help them escape into fantasy (Schimmenti, Somer et al., 2019). Research indicates that this type of psychopathology is linked to negative childhood experiences (Abu-Rayya et al., 2019). While we are unaware of any empirical evidence on the causal nature of childhood abuse in MD, we keep that under constant duress, children who have innate dissociative abilities would activate their innate capacities to create numbing, forgetting, identity alteration, or dissociative absorption experiences involving daydreaming about imaginary companions. (Sanders, 1992; Somer, 2019).

1.3 Post-Traumatic Growth and its relationship with Trauma and Maladaptive Daydreaming

The impact of trauma on individuals has been extensively studied, with emerging research focusing on both negative and positive outcomes. Post-traumatic growth (PTG), defined as positive psychological changes resulting from the struggle with traumatic experiences, has gained attention as a crucial aspect of trauma recovery. Concurrently, maladaptive daydreaming (MD) has been identified as a potential factor that may influence the relationship

between trauma and PTG. This research aims to explore the intricate interplay between adverse childhood experiences, post-traumatic growth, and maladaptive daydreaming.

1.4 Theoretical Framework

The Transactional Theory of Stress and Coping posits that individuals perceive and respond to stress in various ways, encompassing thoughts, emotions, behaviours, and coping strategies. Stress is determined by one's perception of a situation, with coping mechanisms categorized as either adaptive or maladaptive. Adaptive strategies, such as problem-solving and focusing on positives, help manage stress long-term, while maladaptive ones offer short-term relief but exacerbate issues over time.

1.5 Adaptive vs. Maladaptive Coping Strategies

Maladaptive Daydreaming (MD) is a dissociative absorption marked by intense, immersive fantasies, often linked to negative childhood experiences (Bigelsen et al., 2016). Adverse Childhood Experiences (ACEs), encompassing trauma like abuse or neglect, can contribute to maladaptive daydreaming as a coping mechanism (Somer et al., 2020). ACEs can also lead to maladaptive coping styles, such as avoidance or substance abuse, which persist into adulthood. The theory suggests individuals appraise stressors and employ coping strategies, with adaptive approaches fostering post-traumatic growth through social support and finding meaning. Overall, adaptive coping strategies promote resilience and growth in the face of adversity, contrasting with maladaptive strategies that perpetuate stress and hinder long-term well-being (Choi et al., 2015).

Posttraumatic Growth (PTG) theory, developed by Tedeschi and Calhoun (2024), suggests that individuals can experience positive psychological growth following trauma. This theory challenges the view of trauma as solely negative, highlighting the potential for resilience and transformation. PTG arises from cognitive and emotional restructuring, prompting individuals

to reevaluate their beliefs and goals in the aftermath of trauma (Splevins et al., 2010). Five domains of growth include a) Personal Strength, b) Appreciation of Life, c) Relationships with Others, d) New Possibilities, and e) Spiritual or Existential Growth (Tedeschi & Calhoun, 1996).

The current study investigates how maladaptive daydreaming (MD) influences the relationship between trauma history and PTG. Maladaptive daydreaming, characterized by immersive fantasies, may serve as a coping mechanism for individuals with trauma histories. It could potentially mediate the relationship between trauma and PTG by offering a means to process and escape distressing memories. This study also considers the moderating role of MD, suggesting that its presence or absence may influence how trauma impacts PTG. Individuals with MD may use it as a maladaptive coping strategy, hindering PTG by avoiding confronting the trauma directly. Conversely, those without MD may be more inclined to engage in adaptive coping strategies, facilitating PTG.

2. Review of Literature

2.1 Characteristics and Functions of MD

Maladaptive daydreaming (MD) is a complex psychological phenomenon characterized by extensive and immersive fantasy activity, often replacing human interaction and interfering with various aspects of daily functioning. Research into MD has revealed its multifaceted nature, shedding light on its functions, themes, dynamics, and associated psychosocial implications. Somer (2002) conducted a qualitative inquiry into MD, identifying nine themes clustered into three categories: Functions, Themes, and Dynamics. These included functions such as Disengagement from Stress and Pain, Companionship, and Intimacy, as well as recurrent themes like Violence, Idealized Self, and Sexual Arousal. The study highlighted how

MD serves as a coping mechanism, offering relief from distressing emotions and providing a sense of control and comfort.

Maladaptive Daydreaming and Childhood Trauma

Further exploration into the influence of MD on individuals' responses to trauma was undertaken by Abu-Rayya et al. (2019b). Their study found that survivors of childhood sexual abuse (CSA) scored higher on MD compared to controls, suggesting a potential link between trauma and maladaptive daydreaming. Additionally, the authors discovered that MD exacerbated psychosocial problems among survivors, including psychological distress and social isolation.

Somer et al. (2020b) also delved into the relationship between childhood trauma and MD, revealing that individuals with a history of abuse or neglect were more likely to engage in daydreaming as a means of coping with painful memories and regulating emotional distress. Childhood exposure to abuse was associated with daydreaming about idealized versions of family life, highlighting the intricate interplay between past experiences and current coping mechanisms.

Post-Traumatic Growth in Adolescents Exposed to Terrorism

Research on posttraumatic growth (PTG) and its relationship with trauma, resilience, and posttraumatic stress disorder (PTSD) has attracted considerable attention within the field of psychology. Levine et al. (2008) delved into the realm of posttraumatic growth among adolescents, particularly examining its constituent elements and its connection to PTSD. Their study, which involved Israeli adolescents exposed to acts of terror, unveiled two interconnected aspects of growth: outward and intrapersonal. Notably, they observed a linear and curvilinear correlation between growth and PTSD, indicating that PTG tends to peak at moderate levels of posttraumatic stress.

Expanding on this inquiry, Zeidner and Kampler (2020) investigated the enduring repercussions of childhood exposure to terrorist attacks on resilience and PTG during adulthood. Their research, conducted with individuals who experienced such events during their formative years, demonstrated that both objective and subjective evaluations of exposure to terrorism correlated positively with PTG. This underscores the long-lasting impact of early trauma on psychological development later in life. More intense trauma experiences may result in greater benefits (Tedeschi & Calhoun, 1996, p. 456). In fact, a number of studies indicate that the association between exposure and growth follows a 'dose response' function (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003), with higher growth levels noticed when exposure adversity is more severe (i.e., personally life-threatening; Linley & Joseph, 2004).

Relationship Between Trauma, PTSD, and PTG

Contributing further to this discussion, Bensimon (2012) scrutinized the interplay among trauma, PTSD, and posttraumatic growth, with an emphasis on trait resilience. In their study, resilience was conceptualized as an enduring characteristic rather than a transient state. They revealed that trauma heightened both PTSD symptoms and levels of growth, while resilience exhibited a positive association with growth and a negative association with PTSD. This emphasizes the intricate relationship between traumatic experiences, individual resilience, and psychological outcomes, indicating that trait resilience is pivotal in shaping one's response to trauma.

Similarly, Kleim and Ehlers (2009) conducted two studies examining the relationship between posttraumatic growth (PTG) and post-trauma psychopathology in assault survivors. Their research revealed significant curvilinear associations between PTG and posttraumatic stress disorder (PTSD), with survivors reporting either no or high levels of growth experiencing fewer symptoms compared to those with moderate growth levels. Study 1 further identified predictors

of PTG, including factors such as non-Caucasian ethnicity, religiousness, peritraumatic fear, shame, and a ruminative thinking style. Interestingly, PTG appeared most relevant for trauma survivors who attributed enduring significance to the trauma in their lives and experienced initial distress. Moderate levels of PTG did not seem to alleviate post-trauma psychopathology. These findings suggest that the significance of PTG may lie in the lasting impact of trauma on survivors' lives and their initial reactions to distress.

Overall, these studies illuminate the intricate relationship between coping strategies, post-traumatic growth, and psychopathology among individuals affected by trauma. They underscore the pivotal role of adaptive coping mechanisms in fostering positive outcomes and emphasize the nuanced nature of PTG in the context of trauma survivors' experiences and coping responses.

2.2 Need for the study

While extensive research has focused on the negative consequences of trauma, there is a noticeable gap in understanding the positive aspects of individuals' experiences, particularly post-traumatic growth (PTG). Maladaptive daydreaming (MD), a relatively understudied phenomenon, has been suggested to play a role in individuals' coping mechanisms. Investigating its potential connections with Adverse childhood experiences and PTG could provide valuable insights into the complex interplay between cognitive processes, emotional responses, and psychological growth in the aftermath of trauma. Moreover, simultaneously examining Adverse childhood experiences, post-traumatic growth, and maladaptive daydreaming, gives a more complete understanding of the complex dynamics involved in individuals' responses to trauma.

2.3 Significance of the study

The study fills gaps in the literature by investigating the complex interplay of Adverse childhood experiences, post-traumatic growth, and maladaptive daydreaming. By elucidating the moderating and mediating roles of maladaptive daydreaming, the study adds to existing theoretical frameworks, such as Lazarus and Folkman's transactional theory of stress and coping, resulting in a better understanding of the psychological processes that underpin post-traumatic adjustment. The study's findings can help refine and develop theoretical frameworks that shed light on how cognitive, emotional, and coping strategies interact to shape people's responses to trauma and subsequent growth trajectories. The study's findings may assist in influencing the development of screening instruments and assessment measures to identify people who are at risk for maladaptive daydreaming as well as its potential impact on posttraumatic growth. Early identification and intervention can prevent or reduce the negative effects of chronic daydreaming on trauma recovery. The study's findings can also be used to design psychoeducational programs and support programs for trauma survivors, providing individuals with resources and strategies to effectively cope with maladaptive daydreaming tendencies while also maximizing their potential for development and resilience.

3. Methods

3.1 Aim

This research examines the mediating and moderating roles of Maladaptive Daydreaming on Adverse childhood experiences and Post-Traumatic Growth.

3.3 Hypotheses

H1: Maladaptive daydreaming moderates the relationship between Adverse childhood experiences and post-traumatic growth.

H2: Maladaptive daydreaming mediates the relationship between Adverse childhood experiences and post-traumatic growth.

3.4 Research design

This research follows a Non-experimental mediation and moderation model analysis which examines mediating and moderating role of Maladaptive Daydreaming in relationship between Adverse Childhood Experiences and Post-traumatic Growth.

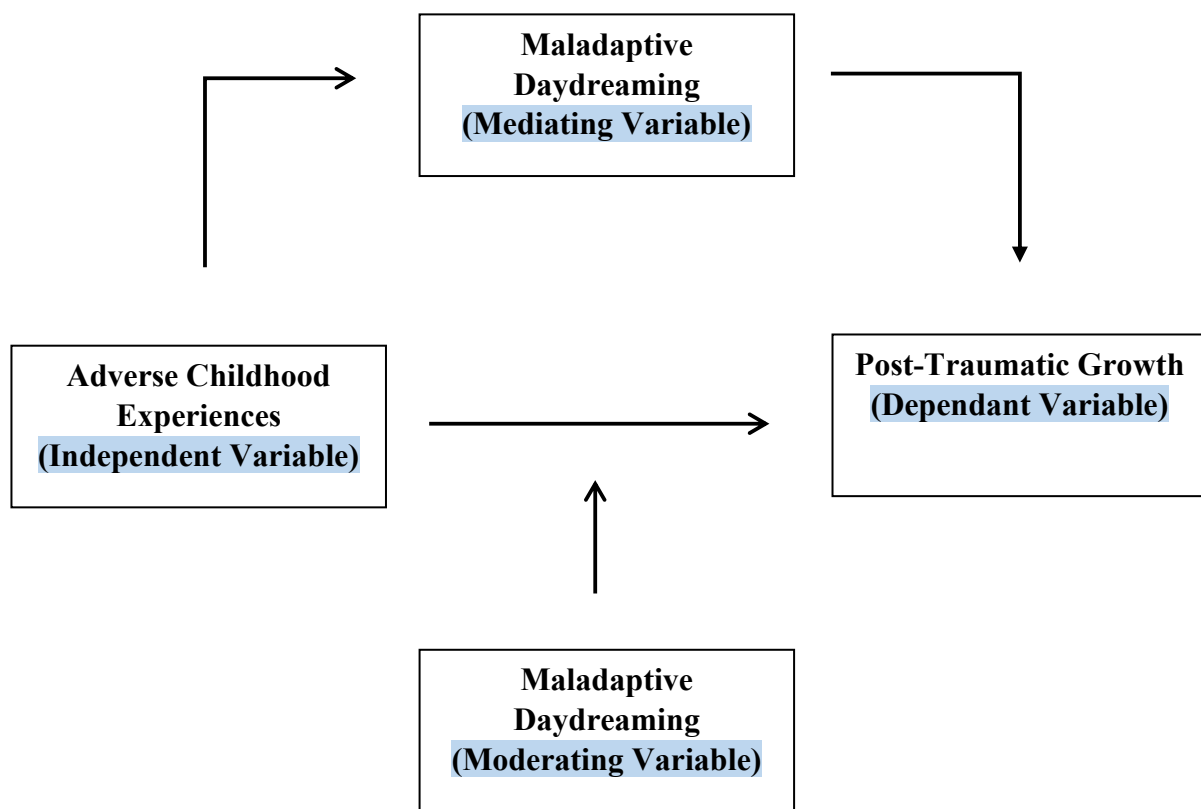


Figure 1: shows the research model: The mediating and moderating roles of Maladaptive Daydreaming (MD) in the Adverse childhood experiences (ACE) and Post – Traumatic Growth (PTG)

3.5 Operational Defining

Adverse Childhood Experiences (ACEs): Adverse childhood experiences are traumatic events that can have long-term negative consequences for a person's health and overall well-being. These experiences include different types of maltreatment and abuse, along with growing up in an atmosphere that is detrimental to a child's development.

Maladaptive Daydreaming: Maladaptive daydreaming (MD) is a compulsion for intense fanciful fantasy that can last for hours and be triggered or maintained either by redolent music or repetitive physical movement (e.g., pacing, rocking, or hand movement). (Abu-Rayya et al., 2019a)

Post-Traumatic Growth: Post-traumatic growth (PTG) is a theory that explains this kind of transformation following trauma. It was developed by psychologists Richard Tedeschi, PhD, and Lawrence Calhoun, PhD, in the mid-1990s, and holds that people who endure psychological struggle following adversity can often see positive growth afterward. (APA)

3.6 Participants

Sample used for this study is Adults of age range 18-35 (*Young Adult Development Project*, n.d.) and they were chosen using Convenience sampling method which involves choosing individuals depending on their availability and proximity to the researcher.

3.7 Sampling method

Convenience sampling was chosen given the delicate subject matter of the research topic (adverse childhood experiences and post-traumatic growth), convenience sampling can prove both practical and ethical, as it allows for the effective selection of participants who have experienced trauma and are willing to share their experiences, thus decreasing the burden on participants as well as researchers.

Sample Size: Sample size of 100 participants, who ranged from 18-35 (*Young Adult Development Project*, n.d.) years of age and were able to provide data for the study.

3.10 Tools Used

Adverse Childhood Experiences International Questionnaire (ACE-IQ; WHO, 2018):The ACE-IQ is a self – report measure, consisting of 45 items, 14 questions are demographics, 30 items explore adverse childhood experiences and one item is used for clarification purposes regarding bullying. The items investigate participant’s family environment, parental neglect, parental loss, verbal abuse, physical abuse, sexual abuse, and violence with a peer setting, community settings, or collective settings. They are rated on a 4-point Likert scale, except for seven items (two rated on a 5-point Likert scale, and five require a “Yes” or “No” answer). Higher scores indicate greater exposure to childhood adversities. ACE-IQ’s reliability (Cronbach’s alpha = 0.854), convergent validity ($r = 0.85$, $p < 0.001$).

Maladaptive Daydreaming Scale: The MDS–16 (Somer, 2018; Somer, Soffer-Dudek, & Ross, 2017; Somer, Soffer-Dudek, Ross, et al., 2017) is a self-report measure made up of 16 items and aimed to identify potential MDers. Respondents are asked to answer the MDS–16 items on a scale ranging from 0% to 100%, with 10% intervals (0% ¼ never/none of the time to 100% ¼ all of the time/extreme amounts).

Post-traumatic Growth Inventory: Tedeschi and Calhoun (1996) developed the Posttraumatic Growth Inventory (PTGI) to assess post-trauma growth and self-improvement a person undergoes. A 21-item scale built on the five-factor model of Tedeschi, the statements included in the inventory are related to the following five factors including, personal strength, new possibilities, improved relationships, spiritual growth, appreciation of life.

Scoring for this scale include,

Participants indicate their scores on a 6-point scale where:

- 0 implies – I did not experience this as a result of my crisis.
- 1 implies – I experienced this change to a very small degree as a result of my crisis.
- 2 implies – I experienced this change to a small degree as a result of my crisis.
- 3 implies – I experienced this change to a moderate degree as a result of my crisis.
- 4 implies – I experienced this change to a great degree as a result of my crisis.
- 5 implies – I experienced this change to a very great degree as a result of my crisis.

The PTGI has demonstrated acceptable to excellent internal consistency reliability. In the current sample, the total 21-item PTGI had an $\alpha = 0.922$; and the subscales of relating to others, $\alpha = 0.772$; new possibilities, $\alpha = 0.736$; personal strength, $\alpha = 0.704$; spiritual change, $\alpha = 0.747$; .and appreciation of life, $\alpha = 0.760$. (Whaley & Mesidor, 2021).

3.11 Procedure

The study adhered to ethical guidelines outlined by the Institutional Review Board (IRB) to ensure participant welfare, privacy, and confidentiality throughout the research process. The participants were recruited through convenience sampling, and the recruitment materials provide information about the study's purpose, procedures, and confidentiality assurances. Prior to participation, participants were provided with a consent form outlining the study's objectives, potential risks and benefits, confidentiality measures, and their rights as participants. The participants can leave the study immediately if they don't wish to complete the study. They can ask any question regarding the procedure at any time during the study. There is no time limit to complete the study but try to complete as soon as possible. There will be no rewards for participating in the study. Participants were required to provide informed consent before proceeding with the study. After collecting the informed consent from the participants, they were given the Adverse Childhood Experiences International Questionnaire

(ACE-IQ), Maladaptive Daydreaming Scale (MDS-16), Posttraumatic Growth Inventory (PTGI). The data for the study was collected through both in-person. The data collected and the results will be used only for research purpose and confidentiality will be maintained even in the process of publication of the research paper.

4. Results

Table 1: shows distribution of Adverse childhood Experiences, Maladaptive Daydreaming, and Post Traumatic growth across different family structure

					95% Confidence Interval								Shapiro-Wilk	
	Family	N	Missing	Mean	Lower	Upper	Median	SD	Minimum	Maximum	W	p		
Total	Nuclear	74	0	5.78	4.969	6.59	5	3.5	0	13	0.9	0.0		
				4	1	8		16		54	09			
	1 parent	7	0	6.71	2.693	10.7	6	4.3	1	11	0.8	0.1		
				4	1	35		48		48	17			
	Extended or Joint	17	0	6.47	4.707	8.23	7	3.4	0	12	0.9	0.7		
				1	1	4		3		67	64			
MD (2)	Nuclear	74	0	0.29	0.190	0.40	0	0.4	0	1	0.5	<		
				7	7	4		6		74	.001			
	1 parent	7	0	0.42	-	0.92	0	0.5	0	1	0.6	0.0		
				9	0.065	3		35		64	01			
	Extended or Joint	17	0	0.58	0.327	0.84	1	0.5	0	1	0.6	<		
				8	4	9		07		32	.001			
Personal strength	Nuclear	74	0	10.9	9.769	12.0	1	4.9	0	19	0.9	0.0		
				19	9	68	1	59		45	03			
	1 parent	7	0	10.8	6.472	15.2	1	4.7	4	17	0.9	0.4		
				57	5	42	2	41		15	33			
	Extended or Joint	17	0	11.8	8.708	15.0	1	6.1	0	20	0.9	0.3		
				82	3	56	2	73		41	29			

New possibilities	Nuclear	74	0	11.7	10.33	13.1	1	6.0	0	23	0.9	<
				43	63	5	3	73			35	.00
												1
	1 parent	7	0	10.8	7.298	14.4	1	3.8	4	15	0.8	0.3
				57		16	0	48			98	2
	Extended or Joint	17	0	14.5	10.79	18.2	1	7.2	0	25	0.9	0.2
				29	02	69	5	73			29	07
Improved relationship	Nuclear	74	0	14.7	13.00	16.5	1	7.7	0	35	0.9	0.3
				97	72	87	4	26			81	17
	1 parent	7	0	15	9.934	20.0	1	5.4	6	21	0.9	0.5
					4	66	5	77			27	29
	Extended or Joint	17	0	18.5	13.69	23.4	2	9.5	0	35	0.9	0.7
				88	68	8	0	14			65	2
Spiritual Growth	Nuclear	74	0	4	3.280	4.71	4	3.1	0	10	0.9	<
					5	9		05			1	.00
												1
	1 parent	7	0	4	-	8.10	2	4.4	0	10	0.8	0.0
					0.101	1		35			18	62
					4							
	Extended or Joint	17	0	4.05	2.071	6.04	3	3.8	0	10	0.8	0.0
				9	9	6		64			59	15
Appreciation for life	Nuclear	74	0	7.08	6.210	7.95	7	3.7	0	15	0.9	0.0
				1	2	2		59			66	44
	1 parent	7	0	8.14	5.149	11.1	7	3.2	4	14	0.9	0.7
				3	4	36		37			49	25
	Extended or Joint	17	0	9.52	7.354	11.7	1	4.2	0	15	0.9	0.2
				9	7	04	0	3			32	39

Note: The CI of the mean assumes sample means follow a *t*-distribution with $N - 1$ degrees of freedom

Table 2: shows the relationship between Adverse Childhood Experiences, Maladaptive Daydreaming and Post-Traumatic Growth

		Adverse Childhood Experiences	Personal strength	New possibilities	Improved relationship	Spiritual Growth	Appreciation for life	Maladaptive Daydreaming
Adverse Childhood Experiences	Spearman's rho	—						
Personal strength	Spearman's rho	0.064	—					
New possibilities	Spearman's rho	0.154	0.663	***	—			
Improved relationship	Spearman's rho	-0.049	0.637	***	0.669	***	—	
Spiritual Growth	Spearman's rho	-0.022	0.435	***	0.532	***	0.549	***
Appreciation for life	Spearman's rho	0.204	*	0.673	***	0.723	***	0.6
Maladaptive Daydreaming	Spearman's rho	0.223	*	0.103		0.182	0.209	*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Interpretation

Spearman rho Correlation was used and Table 2 presents the relationship between Adverse Childhood Experiences (ACEs), Maladaptive Daydreaming (MD), and Post-Traumatic Growth (PTG) dimensions. Significant positive correlations were observed between MD and Appreciation for Life ($r = .342$, $p < .001$), Spiritual Growth ($r = .326$, $p < .01$), and Improved Relationships ($r = .209$, $p < .05$). ACEs showed a significant positive correlation with Appreciation for Life ($r = .204$, $p < .05$) and MD ($r = .223$, $p < .05$).

Mediation Analysis**Table 3:** *Mediation between Adverse Childhood experiences (Independent Variable)**Maladaptive daydreaming (Mediating variable), Appreciation for life (Dependent Variable)*

Effect	Estimate	SE	Z	p
Indirect	.0835	.0427	1.95	.051
Direct	.1600	.1055	1.52	.129
Total	.2434	.1082	2.25	.024

Table 4: *Mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable), Personal Strength (Dependent Variable)*

Effect	Estimate	SE	Z	p
Indirect	.0377	.0386	.976	.329
Direct	.0712	.1494	.476	.634
Total	.1089	.1460	.745	.456

Table 5: *Mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable), New Possibilities (Dependent Variable)*

Effect	Estimate	SE	Z	p
Indirect	.0791	.0533	1.485	.137
Direct	.1773	.1774	.999	.318
Total	.2564	.1755	1.461	.144

Table 6: *Mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable), Improved Relationship (Dependent Variable)*

Effect	Estimate	SE	Z	p
Indirect	.137	.0783	1.75218	.080
Direct	-.138	.2271	-.60590	.545
Total	-4.87e-4	.2279	-.00214	.998

Table 7: Mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable), Spiritual Growth (Dependent Variable)

Effect	Estimate	SE	Z	p
Indirect	.07701	.0386	1.9952	.046
Direct	-.08274	.0914	-.9053	.365
Total	-.00574	.0944	-.0608	.952

Interpretation

Mediation analysis was conducted using Jamovi. Table 2 shows mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable) and Appreciation for life (Dependent Variable). It indicates that the total effect was significant ($b = .2434$, $p < .05$), but the indirect effect was near to significance ($b = .0835$, $p = .051$). Table 6 indicates the Mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable), and Spiritual Growth (Dependent Variable). It shows a significant indirect effect ($b = .07701$, $p < .05$). The mediation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Mediating variable) and Personal Strength, New possibilities, and Improved Relationships (Dependent Variable) indicates no significant mediation ($p > .05$).

*Moderation Analysis***Table 8:** *Moderation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Moderating variable), Personal Strength (Dependent Variable)*

	Estimate	SE	Z	p
Adverse Childhood Experiences	.159	.150	1.06	.291
Maladaptive Daydreaming	1.301	1.047	1.24	.214
Adverse Childhood Experiences * Maladaptive Daydreaming	-.567	.293	-1.94	.053

Table 9: *Moderation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Moderating variable), Improved Relationship (Dependent Variable)*

	Estimate	SE	Z	p
Adverse Childhood Experiences	-.0642	.231	-.277	.781
Maladaptive Daydreaming	4.3729	1.613	2.711	.007

Adverse Childhood Experiences				
*				
Maladaptive Daydreaming				
	-.4760	.451	-1.055	0.291

Table 10 – Moderation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Moderating variable), New Possibilities (Dependent Variable)

	Estimate	SE	Z	p
Adverse Childhood Experiences	.256	.180	1.42	.155
Maladaptive Daydreaming	2.576	1.254	2.06	.040
Adverse Childhood Experiences				
*				
Maladaptive Daydreaming	-.509	.351	-1.45	.147

Table 11: Moderation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Moderating variable), Spiritual Growth (Dependent Variable)

	Estimate	SE	Z	p
Adverse Childhood Experiences	-.0866	.0936	-.926	.355
Maladaptive Daydreaming	2.3888	.6526	3.661	<.001
Adverse Childhood Experiences	.0250	.1825	.137	.891
*				
Maladaptive Daydreaming				

Table 12: Moderation between Adverse Childhood experiences (Independent Variable), Maladaptive daydreaming (Moderating variable), Appreciation for life (Dependent Variable)

	Estimate	SE	Z	p
Adverse Childhood Experiences	.226	.106	2.14	.033
Maladaptive Daydreaming	2.692	.737	3.65	<.001
Adverse Childhood Experiences *				
Maladaptive Daydreaming	-.426	.206	-2.07	.039

Interpretation

Moderation analysis was conducted using Jamovi. Table 11 shows the interaction between Adverse childhood experiences and Appreciation for life is moderated by Maladaptive Daydreaming ($b = -.426$, $SE = .206$, $z = -2.07$, $p < .05$). Table 7, 8, 9, 10 shows that there is no interaction between Maladaptive Daydreaming and Adverse childhood experiences ($p > .05$).

5. Discussion

5.1 Findings

This study explored the relationships between post-traumatic growth (PTG), maladaptive daydreaming (MD), and adverse childhood experiences (ACEs) in various family setups. Non-traditional family structures may be linked to more adverse childhood experiences, as evidenced by descriptive statistics showing that participants from single-parent families

reported the highest mean ACE scores ($M = 6.71$), followed by extended/joint families ($M = 6.47$), and nuclear families ($M = 5.78$). Maladaptive daydreaming was also more common in nuclear households ($M = .297$), single-parent families ($M = .429$), and extended/joint families ($M = .588$).

All five PTG characteristics showed the highest scores among participants from extended/joint families, suggesting that these arrangements may promote higher growth and resilience after adversity, maybe as a result of more social support and a wider variety of perspectives (Walsh, 2015).

The first hypothesis was partially supported, with ACEs showing a significant positive relationship with only the Appreciation for Life dimension of PTG ($r = .204$, $p < .05$), consistent with Tedeschi and Calhoun's (2004) findings that trauma may promote specific domains of growth.

The second hypothesis received partial support through a significant moderation effect. Maladaptive daydreaming moderated the relationship between ACEs and Appreciation for Life ($b = -.426$, $p < .05$), suggesting excessive MD may diminish the positive effect of ACEs on life appreciation (Somer, 2002).

The third hypothesis was partially supported through mediation analysis. ACEs had a significant indirect effect on Spiritual Growth through MD ($b = .07701$, $p < .05$), indicating full mediation. The indirect effect of ACEs on Appreciation for Life via MD approached significance ($b = .0835$, $p = .05$). This suggests MD may function as a cognitive mechanism translating childhood adversity into specific aspects of post-traumatic growth, particularly spiritual development.

5.2 Conclusion

The descriptive analysis provides insight into ACEs, MD, and PTG dimensions distribution across various family structures. The findings point towards intricate relationships between family environment, childhood adversity, maladaptive coping mechanisms, and post-traumatic growth. While extended and single-parent families may be associated with an increased risk of ACEs and MD, they may also provide unique environments that promote certain aspects of post-traumatic development. These findings emphasize the importance of multifaceted research and clinical practice methods that consider the various influences of family structure on psychological outcomes after childhood adversity. This study also supports the complex roles of maladaptive daydreaming in the relationship between adverse childhood experiences and post-traumatic growth. The results suggest that maladaptive daydreaming may have both mediating and moderating effects, particularly on spiritual growth and appreciation for life. These findings highlight the importance of taking nuanced approaches to understanding and addressing the long-term effects of childhood adversity on psychological development and well-being.

5.3 Limitations

The findings are limited in their generalizability due to a smaller sample size for mediation and moderation analysis, also unequal sample sizes across family structure groups, particularly the small number of participants from single-parent families. Furthermore, the cross-sectional nature of the data precludes drawing causal conclusions about the relationships between family structure, ACEs, MD, and PTG. The reliance on self-report measures may result in bias.

5.4 Recommendation

To address these limitations, future studies should consider using multi-method approaches and longitudinal designs. These findings emphasize the need for holistic approaches to

understanding and addressing the long-term impact of adverse childhood experiences on psychological development and well-being. These findings also highlight the significance of multifaceted methods in research and clinical practice that consider the various influences of family structure on psychological outcomes following childhood adversity. Future research should look into the domain-related effects of maladaptive daydreaming on posttraumatic growth. Furthermore, longitudinal studies could shed light on the temporal dynamics of these relationships and provide more evidence for causal mechanisms. Clinical implications of this research may include the need for targeted interventions to deal with maladaptive daydreaming in trauma survivors, potentially harnessing its benefits for spiritual growth while mitigating its potential negative effects on other aspects of post-traumatic growth.

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