

## PERCEIVED STRESS, PSYCHOLOGICAL FLEXIBILITY AND EUDAIMONIC WELLBEING

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### ABSTRACT

*In a world where stress is an inevitable part of modern life, understanding the psychological processes that promote well-being has become increasingly important. This study explored the relationship between stress and eudaimonic well-being, with psychological flexibility examined as a key mediating variable across different age groups. The previous study investigates that adults who have more psychological flexibility have higher wellbeing. Due to which the stress encountered is dealt effectively because of the psychological flexibility in turn increasing wellbeing. A total of 255 community-dwelling individuals from Lahore, Pakistan, were recruited through convenience sampling. After excluding 30 participants diagnosed with psychological illnesses, the final sample included 150 young adults and 105 middle-aged adults. Participants completed a battery of self-report measures, including the Perceived Stress Scale (PSS-10) (Cohen et al., 1983), the CompACT-15 (B.K Thomas et al., 2023) assessing psychological flexibility, and the 21-item Eudaimonic Well-Being Scale (Watermann et al., 2010). Statistical analyses included reliability checks, independent samples t-tests, bivariate correlations, and parallel mediation analyses MODEL 4 for each age group. Findings revealed that young adults reported significantly higher stress levels than middle-aged adults, suggesting developmental differences in coping capacity and emotional regulation. Psychological flexibility significantly mediated the relationship between stress and well-being in both groups. Among its dimensions, valued action consistently emerged as a strong mediator, indicating that commitment to personal values may protect against the adverse effects of stress. Additionally, behavioral awareness was a unique mediator in young adults, highlighting the importance of mindful attention to present experiences during early adulthood. These results underscore psychological flexibility as a crucial resilience factor in sustaining eudaimonic well-being under stress, with implications for age-tailored interventions. Enhancing valued living and behavioral awareness may offer powerful tools for improving psychological functioning, particularly in younger adults navigating high-stress life transitions. The study highlights how psychological flexibility is an important contributing factor in enhancing eudaimonic wellbeing even in daily stressful life conditions.*

**Keywords:** Perceived stress, eudaimonic well-being, psychological flexibility, valued action, behavioral awareness, mediation analysis.

### Introduction

Eudaimonic well-being (EWB) has been widely recognized as a deeper form of psychological health that goes beyond the pursuit of hedonic pleasure. Rooted in Aristotle's philosophy and operationalized in modern psychology, EWB is characterized by purpose in life, autonomy,

personal growth, and authenticity (Ryff, 1989). It reflects an enduring state of flourishing, where individuals align their lives with intrinsic values and engage meaningfully with the world around them. While stress is an inevitable part of life, persistent or poorly managed stress can erode the psychological, emotional, and

biological capacities required to sustain such flourishing (McEwen & Stellar, 1993). Understanding how stress undermines or, under certain conditions, enhances EWB remains a central question in contemporary well-being research.

Importantly, stressors and coping resources vary across the adult lifespan. Young adulthood is often marked by transitions such as identity formation, academic pressures, peer relationships, and emerging career paths. These challenges, though stressful, are often transient and may serve as opportunities for growth. By contrast, middle adulthood introduces more enduring and complex stressors, including family responsibilities, career stability or stagnation, health-related concerns, and the navigation of long-term relationships (Lupien et al., 2009). These life-stage differences suggest that stress may not exert a uniform effect on well-being; instead, its impact may depend on both the type of stressors encountered and the developmental context in which they occur.

#### **Theoretical Framework:**

The Cognitive Activation Theory of Stress (CATS) emphasizes coping expectancy, arguing that stress becomes maladaptive when individuals doubt their ability to manage challenges. Expectancy failure fosters helplessness, disengagement, and stagnation, all of which obstruct the pursuit of meaningful goals (Ursin & Eriksen, 2004). In contrast, when stress is perceived as manageable, it may stimulate resilience and personal growth, paradoxically contributing to higher well-being. The Allostatic Load Theory complements this view by illustrating how chronic stress causes cumulative “wear and tear” on the body’s regulatory systems, impairing cognition, mood, and emotional regulation, thereby limiting one’s capacity to sustain long-term flourishing (McEwen & Stellar, 1993). The Diathesis-Stress Model extends these explanations by highlighting individual vulnerabilities: stress alone may not erode well-being, but when combined with predispositions such as emotional sensitivity or past trauma, it can significantly impair self-acceptance and life purpose (Ingram & Luxton, 2005). Similarly, psychoneuroimmunology (PNI) underscores the role of immune dysregulation and inflammation in linking chronic stress to

declines in vitality, mood, and engagement with life, which collectively hinder EWB (Ader et al., 2001). Taken together, these perspectives position stress as a multifaceted threat to flourishing, acting simultaneously at cognitive, emotional, physiological, and existential levels. Protective factors that buffer stress and promote resilience are therefore of significant interest. Psychological flexibility, central to Acceptance and Commitment Therapy (ACT), reflects the ability to remain open, mindful, and engaged in value-driven behavior even in the presence of distress (Hayes et al., 2006). Through processes such as acceptance, mindfulness, values clarification, and committed action, psychological flexibility enables individuals to adaptively navigate adversity. Empirical evidence has shown that psychological flexibility is inversely related to psychopathology and positively associated with life satisfaction, resilience, and EWB (Kashdan & Rottenberg, 2010). ACT-based interventions have demonstrated improvements in purpose in life, personal growth, and self-acceptance (Bohlmeijer et al., 2011), while flexibility has been identified as a mediator between life stress and well-being (Gloster et al., 2017). These findings underscore its potential as a protective pathway through which stress may be transformed into opportunities for growth.

#### **Literature Review:**

Concise evidence from recent studies illustrates these dynamics. Stress during adulthood mirrors the effects seen in earlier life stages but is typically reversible once the stressor is removed. Chronic exposure to high glucocorticoid levels in adulthood has been linked to depressive disorders, whereas post-traumatic stress disorder (PTSD) is associated with lower glucocorticoid levels. In aging, stress contributes to memory decline and reduced hippocampal volume. Stress influences brain and behavior differently across developmental stages, with adolescence and adulthood presenting unique vulnerabilities and opportunities (Lupien et al., 2009). One of the studies utilized an online randomized controlled trial to examine the effectiveness of Acceptance and Commitment Therapy (ACT) in reducing stress and improving well-being. ACT-based interventions show that increasing

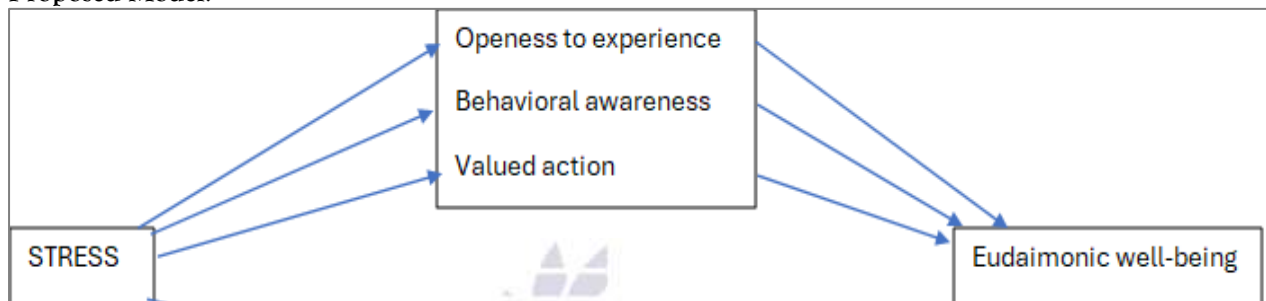
psychological flexibility reduces stress while simultaneously enhancing well-being (Wersebe et al., 2017). Psychological flexibility also contributes to well-being indirectly through need satisfaction, consistent with the Eudaimonic Activity Model (Howell & Demuyne, 2022). Collectively, this growing body of evidence highlights psychological flexibility as a key resilience-enhancing mechanism in the stress-EWB relationship. Psychological flexibility and psychological inflexibility were studied and independently associated with both hedonic and eudaimonic well-being (Howell & Demuyne, 2022). Results from both studies showed that

psychological flexibility and inflexibility were significantly and independently linked to well-being.

**Hypotheses:**

1. Stress is likely to have a negative relationship with eudaimonic wellbeing.
2. Psychological flexibility consisting of openness to experience, behavioral awareness and valued action will have a positive mediating relationship with eudaimonic well-being.
3. Psychological flexibility dimensions (CAVA, CABA, CAO) would mediate this relationship, reducing the negative effect of stress.

**Proposed Model:**



**Methods:**

**Table 1**

*Socio demographic characteristics of participants for N=255.*

Characteristics	Young Adults			Middle Adults		
	n	%	M(SD)	n	%	M(SD)
Age			22.27(3.21)			40.57(8.67)
Gender						
Male	51	34.0		44	41.9	
Female	99	66.0		61	58.1	
Birth order						
First born	49	32.7		28	26.7	
Middle born	65	43.3		49	46.7	
Last born	36	24.0		28	26.7	
Marital status						
Unmarried	125	83.3		3	2.9	
Married	17	11.3		96	91.4	
Engaged	8	5.3		1	1.0	
Divorced	-	-		5	4.8	
Family status						
Nuclear	102	68.0		52	49.5	
Joint	47	31.3		53	50.5	
Education			13.73(2.80)			16.44(2.41)
Under graduated	92	61.3		11	10.5	

Graduated	43	28.7	44	41.9
Masters	15	10.0	48	45.7
Doctorate	-	-	1	1.0
Occupation				
Student	115	76.7	25	23.8
Unemployed	19	12.7	56	53.3
Employed	14	9.3	21	20.0
Business	2	1.3	3	2.9
Socio economic status				
High class	2	1.3	3	2.9
Middle class	137	91.3	92	87.6
Low class	11	7.3	10	9.5
Region				
Rural	14	9.3	9	8.6
Urban	136	90.7	96	91.4

n= number of participants; %= percentage; M= mean; SD= standard deviation.

### Research Design

A cross-sectional design was employed to examine the relationship between perceived stress, psychological flexibility, and eudaimonic well-being. The design allowed for data collection without manipulation of variables, making it suitable for identifying associations among constructs (Creswell & Creswell, 2018).

### Participants and Sampling

A total of 255 participants were recruited from the community of Lahore, Pakistan, comprising 150 young adults (ages 19-29;  $M = 22.70$ ,  $SD = 3.21$ ) and 105 middle-aged adults (ages 30-59;  $M = 40.57$ ,  $SD = 8.67$ ), in line with World Health Organization (WHO, 2022) criteria for age categorization. Participants were selected using convenience sampling, a non-probability technique based on availability and inclusion criteria. Adults with at least secondary education were included, while individuals diagnosed with psychological disorders or intellectual disability were excluded.

Of the final sample, 95 were male and 160 were female. The young adult sample consisted of 66% females and predominantly single individuals (83.3%), whereas the middle-aged sample included 58.1% females and 91.4% married participants. Most participants belonged to the middle socioeconomic class (young adults: 91.3%; middle adults: 87.6%) and lived in urban areas (approximately 90-94%).

### Assessment Measures

**Sociodemographic Form.** A self-developed demographic sheet collected information on participants' age, gender, marital status, education, socioeconomic status, and family system.

**Perceived Stress Scale (PSS-10).** Perceived stress was assessed using the 10-item version of the PSS (Cohen et al., 1983). Respondents rated their stress over the past month on a 5-point Likert scale. Items 4, 5, 7, and 8 were reverse scored, and higher total scores indicated greater stress. Reported internal consistency reliability ranges from  $\alpha = .78$  to  $.91$  across studies (Cohen & Williamson, 1988; Lee, 2012). The scale was translated into Urdu following permission from the authors.

**Comprehensive Assessment of Acceptance and Commitment Therapy Processes-15 (CompACT-15).** Psychological flexibility was measured using the CompACT-15 (Francis et al., 2023), a 15-item measure assessing three processes: Openness to Experience (CAOE), Behavioral Awareness (CABA), and Valued Action (CAVA). Items were rated on a 7-point Likert scale, with subscales scored after reverse coding where applicable. Reported internal consistency coefficients are  $\alpha = .81$  for CAOE,  $\alpha = .78$  for CABA, and  $\alpha = .86$  for CAVA (Francis et al., 2023). The Urdu version was prepared with author permission.

**Questionnaire for Eudaimonic Well-Being (QEWB).** Eudaimonic well-being was assessed using the 21-item QEWB (Waterman et al., 2010). Responses were recorded on a 7-point Likert scale. Items 23, 27, 31, 32, 36, 39, and 40 were reverse scored, and higher scores indicated greater well-being. The scale demonstrates high internal consistency, with reported  $\alpha$  values ranging from .86 to .91 (Schutte et al., 2013). Translation into Urdu was conducted with author approval.

**Results:**

The aim of the study was to examine the relationship between stress and eudaemonic wellbeing in young and middle adulthood. And

to explore the mediating role of psychological flexibility in the link between stress and eudaemonic wellbeing in young and middle adulthood.

**Reliability analysis**

A reliability analysis was conducted to assess the psychometric properties of the scales and subscales measuring the study variables, including perceived stress scale. For psychological flexibility valued action, openness to experience, behavioral awareness. Cronbach's alpha coefficients, along with the means, standard deviations, and score ranges, were computed. The table presents the results of these calculations.

**Table 2**  
*Psychometric Properties of scales and their subscales*

Scale	K	Mean	SD	Range	Cronbach's $\alpha$
Perceived stress scale	10	21.89	6.10	0-40	.66
Psychological flexibility scale	15				
Valued action	5	19.95	5.09	0-30	.65
Openness to experience	5	10.64	5.29	0-30	.60
Behavioral awareness	5	14.10	5.80	0-30	.63
Eudaimonic wellbeing	21	53.17	10.73	0-84	.73

Note: K= is the total number of items according to the respective scale or subscale.

The assessment of the psychometric properties of the study instruments revealed generally acceptable to moderate levels of internal consistency across the scales and their respective subscales.

**Correlation analysis**

Correlational analysis was run to test hypothesis related to relationship between

stress, eudaimonic wellbeing, psychological flexibility and demographics. To analyze the existence and strength of significant relationships.

Firstly, the correlational analyses were run on the sample of young adults N1= 150. Which evaluated the relationship between the variables under study and demographics.

**Table 3**  
*Correlation of covariate, Perceived Stress, Psychological flexibility and Eudaimonic wellbeing for young adults N1=150*

	EWB	1	2	3	4	5	6	7	8	9	10	11	12
1Gender	-.09												
2Birth order	-.10	.12											
3Mar status	.05	.13	-.08										
4Fam status	.04	.00	-.05	.17*									
5Edu yrs	-.08	.16*	-.03	.23**	.05								

6Occ	.02	-.18*	-.03	.24**	.13	.44**							
7Region	-.01	.06	.08	-.12	-.03	.03	-.06						
8SES	.01	-.10	-.14	-.00	.00	-.08	.03	.01					
9PSST	-.24**	.26**	-.00	-.13	.05	.01	-.05	.03	.03				
10CAVA	.47**	-.03	.01	-.06	-.09	-.03	.03	-.03	-	-.20*			
11CAOE	-.22**	-.08	.00	-.18	.13	-.01	-.07	.11	.02	-.12	-.45**		
12CABA	.00	-.09	-.00	-.03	.12	-.05	-.12	.22**	.09	-.24**	-.43**	.61**	
13 EWB													
Mean	50.12	.66	.91	.22	.36	13.73	.35	.91	.94	20.70	18.95	11.47	13.74
SD	9.25	.47	.75	.52	.71	2.80	.70	.29	.28	6.92	4.83	5.45	5.44

Note: \*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ . PSS= Perceived Stress Scale, EWB= Eudaimonic wellbeing scale, CAVA= CompAct valued action scale, CABA= CompAct Behavioral Awareness scale, CAOE= CompAct Openness to Experience scale

**Table 4**  
*Correlation of covariate, Perceived Stress, Psychological flexibility, Gratitude and Eudaimonic wellbeing for middle adults N2=105.*

	EWB	1	2	3	4	5	6	7	8	9	10	11	12
1	-.02	-											
Gender													
2Birth order	-.00	.05	-										
3 Mar status	.03	-.10	.02	-									
4 Fam status	.03	-.18	.00	-	.24**								
5 Edu yrs	-.03	-.07	-.06	-.06	-.07	-							
6 Occ	.05	-	-.14	-.08	.00	.171	-						
7 Region	.04	-.19	.18	-.23*	-.03	.11	.19	-					
8 SES	.24*	.06	-.07	.03	.02	-.12	-.10	-.05	-				
9 PSST	-.29**	.15	-.14	.11	.12	-.15	-	-.27**	-.07	-			
10 CAVA	.48**	-.06	.05	-.04	-.02	.12	-.19*	-.01	.11	-.02	-		
11 CAOE	-.36**	.14	-.14	-.07	.06	.03	.14	.07	-.08	-.00	-.52**	-	
12 CABA	.11	.03	-.02	-.03	-.08	-.02	.13	.14	-.03	-.30**	-.36**	.28**	-
16 EWB	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	57.53	.58	1.00	1.08	.50	16.44	1.02	.91	.93	18.45	21.37	9.45	14.61
SD	11.23	.49	.73	.47	.50	2.41	.74	.28	.34	6.27	5.15	4.84	6.27



CI [-0.54, -0.12], indicating that higher levels of perceived stress were associated with lower eudaimonic well-being. However, when the mediators were included in the model, the direct effect of perceived stress on eudaimonic

well-being was reduced to nonsignificance,  $b = -0.11$ ,  $SE = 0.10$ ,  $t(145) = -1.09$ ,  $p = .278$ , 95% CI [-0.31, 0.09], suggesting that the effect of stress on well-being was fully mediated.

### Middle adults

#### Consequent

Antecedent	M1(CAVA)			M2(CAOE)			M3(CABA)			Y(EWB)				
	Coef	SE	p	Coef	SE	p	Coef	SE	p	Coef	SE	p		
X(PSS)	a1	-0.01	.08	a2	-.005	.07	a3	-.30	.09	.0	c'	-.30	.09	.0
M1	-	-	-	-	-	-	-	-	-	-	b	1.03	.20	.0
M2	-	-	-	-	-	-	-	-	-	-	b	-.46	.21	.0
M3	-	-	-	-	-	-	-	-	-	-	b	.50	.15	.0
Constant	im	21.6	1.5	im	9.55	1.4	im	20.1	1.8	.0	iy	38.8	7.5	.0
	1	9	7	2		8	3	8	2	0		9	6	0
	R2=0.0005			R2=0.000			R2=0.0912			R2= .3946				
	F (1,103) =0.048, p=.010			F (1,103) =0.00, p=0.946			F (1,103) =10.33, p=0.001			F (4,100) =16.29, p=0.00				

Note: \*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ , X=Predictor (IV), M= Mediator, Y=Outcome EWB(DV),  $\beta$  = Beta value, PSS= Perceived stress scale, M1= (CAVA), M2= (CAOE), M3= (CABA),  $R^2$  = R-Square.

In sample of middle age adults. No mediation was evident between Valued Action, Openness to Experience and Eudaimonic Wellbeing. However, both form of Psychological flexibility showed independent influence on EWB.

Behavioral Awareness related PF, proved to mediate between stress and EWB. It suggested middle age bring behavioral in more control and responsibility of actions lessen stress and maintains EWB.

### Discussion

The correlational findings further support theoretical and empirical links among perceived stress, psychological flexibility, and eudaimonic well-being across adulthood. Consistent with prior research, perceived stress was negatively associated with eudaimonic well-being in both young and middle-aged adults, reinforcing evidence that stress undermines optimal psychological functioning and meaning-oriented well-being (Ryff, 2014; Sheldon, 2016).

Valued action demonstrated a strong positive association with eudaimonic well-being across both age groups, underscoring the central role of value-consistent engagement in promoting purpose, autonomy, and personal growth (Hayes et al., 2012; Ryff & Singer, 2008). In contrast, openness to experience was negatively correlated with eudaimonic well-being, suggesting that lower acceptance of internal experiences and greater experiential avoidance may restrict psychological flexibility and diminish well-being, a pattern consistent with Acceptance and Commitment Therapy theory (Kashdan & Rottenberg, 2010; Hayes et al., 2012). Behavioral awareness was not significantly associated with eudaimonic well-being at the correlational level among middle-aged adults, indicating that its influence may be indirect or context-dependent rather than a direct contributor to well-being. Overall, these findings highlight psychological flexibility as a key construct in understanding stress-well-

being relationships while suggesting developmental differences in the functional roles of its components (Baltes et al., 2006).

The present study investigated psychological flexibility as a mediating mechanism in the relationship between perceived stress and eudaimonic well-being across young and middle adulthood, revealing both shared and developmentally specific pathways. Consistent with existing literature, higher perceived stress was associated with lower eudaimonic well-being, supporting the view that stress undermines optimal psychological functioning and personal growth (Ryff, 2014). Among young adults, this association was fully mediated by valued action, behavioral awareness, and openness to experience, indicating that stress impacts well-being primarily by disrupting flexible engagement with values, present-moment awareness, and experiential openness. This pattern is consistent with Acceptance and Commitment Therapy (ACT), which conceptualizes psychological inflexibility as a core process through which stress diminishes adaptive functioning (Hayes et al., 2012). Given that young adulthood is a developmental period marked by identity exploration and evolving self-regulatory capacities, stress-related impairments in psychological flexibility may be particularly detrimental to maintaining meaning, autonomy, and purpose—central components of eudaimonic well-being (Arnett, 2000; Ryff & Singer, 2008).

In contrast, the mediational structure in middle-aged adults was more selective. Valued action and openness to experience did not mediate the stress–well-being relationship, although both exerted significant independent effects on eudaimonic well-being, suggesting that these processes remain important but are less vulnerable to stress-related disruption in middle adulthood. Behavioral awareness, however, emerged as the sole mediator, indicating that conscious regulation of behavior plays a critical role in buffering the negative effects of stress at this life stage. From a life-span developmental perspective, middle adulthood is characterized by greater role stability, responsibility, and accumulated coping experience, which may protect value-based action and experiential openness from

stress (Baltes et al., 2006). Nevertheless, heightened behavioral awareness appears essential for managing ongoing demands and maintaining purposeful engagement, underscoring the importance of developmentally tailored interventions that emphasize broad psychological flexibility in young adults and targeted enhancement of behavioral awareness in middle-aged adults.

### Conclusion

This study examined the linkages between perceived stress, psychological flexibility, and eudaimonic well-being among young and middle-aged adults. Findings underscored the significant influence of psychological flexibility. The scores on the analysis elaborated that the relation was mediated for young adults' population but was otherwise for middle adults. The discussion supported the results with respect to the theory. Explaining the behaviors, personality developments alongside the age brackets explained the processes and scores much better. Aligning the results it's concluded that tailored methods of ACT can be used for the betterment population and enhancing psychological flexibility in return increasing the eudaimonic wellbeing.

### Limitations and suggestions

The cross-sectional design limits the ability to establish causality between variables.

The sample may not fully represent the diversity of cultural, regional, or socioeconomic backgrounds, limiting generalizability.

1. Age categories used may not capture the full developmental range, and their cultural relevance may vary across different regions of Pakistan and globally.
2. Self-report measures could have introduced biases such as social desirability or inaccurate self-perception.
3. Educational and workplace wellness programs can promote value-based behavior as a resilience factor.
4. Future research can examine these mediational pathways longitudinally and across different age groups.

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