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A Moderating Role of Psychological Distress in Life Satisfaction: A Secondary Analysis of Elderly Old Home Residents and Community Dwellers

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Abstract

Background

The identification of psychosocial problems among the elderly is more critical than ever, as this population is projected to outnumber younger age groups in the coming decades. This continuation of the study extends prior research on the role of wisdom and resilience in predicting life satisfaction among older adults by introducing psychological distress as a moderating risk factor. Building upon earlier findings (Hayat, Khan, & Sadia, 2017), the study investigates whether psychological distress alters the strength of the mediated relationship between resilience, wisdom, and life satisfaction in elderly populations.

Method

A cross-sectional survey was conducted with 212 older adults in Pakistan (Community dwelling = 124; old-age homes = 88). Standardized measures were used to assess wisdom, resilience, life satisfaction, and psychological distress, the latter encompassing subcomponents of depression, anxiety, and stress. Hierarchical regression and moderated mediation analyses were performed through PROCESS Macro in SPSS-27 (Model 59; Hayes, 2022).

Results

Consistent with prior findings, resilience fully mediated the relationship between wisdom and life satisfaction. Testing psychological distress as a moderator revealed that it did not significantly alter the direct or indirect effects of wisdom on life satisfaction. However, psychological distress significantly moderates the relationship between resilience and life satisfaction, with higher levels of distress weakening the positive impact of resilience. Additionally, sociodemographic variables such as place of residence, family structure, and gender exhibited significant associations with psychological outcomes.

Conclusion

The study reaffirms the robustness of the full mediation model linking wisdom, resilience, and life satisfaction among older adults while identifying psychological distress as a significant risk factor moderating the resilience and life satisfaction relationship. The findings underscore the needs for interventions that both strengthen resilience and reduce psychological distress, particularly tailored to the needs of elderly individuals in collectivistic and resource constrained societies.

What the paper adds to existing literature

- **Integration of psychological distress as a risk factor in the resilience and life satisfaction relationship**
    1. The study extends previous findings by incorporating psychological distress as a moderate variable, providing a more nuanced understanding of well-being determinants in older adults.
- **Comparative Analysis across living settings of elderly**
    1. The study also offers evidence from both institutionalized (old-age homes) and community-dwelling elderly, highlighting context-specific variations in the psychosocial predictors of life satisfaction.
- **Use of Moderation Analysis (Process Model 59) in Gerontological research**
    1. Demonstrates the utility of advanced statistical modeling to identify interactions effects among psychosocial constructs, contributing methodologically to aging research in South Asian contexts.

Applications of study findings to gerontological practice, policy, and/or research.

- **Practice:** The study informs mental health practitioners and social workers about the need to address psychological distress alongside resilience-building interventions to optimize life satisfaction in elderly populations.
- **Policy:** The study supports the development of gerontology policies that integrate mental health screening and distress reduction strategies in elderly care programs, particularly in institutional settings.
- **Research:** Lastly, the study encourages further investigation into risk-protective factor interactions in aging, using culturally validated measures and longitudinal designs to track changes over time.

Introduction

The global rise in aging population presents formidable and multifaceted challenges for health systems, social care frameworks, and the psychological well-being of individuals worldwide (World Health Organization, 2015; Beard et al., 2016). The proportion of individuals aged 65 + has doubled, from 5.5% in 1974 to 10.3% in 2024, and projections indicate a further surge to approximately 20.7% by 2074 (United Nations, 2020). In many developed countries, the average annual growth in the proportion of elderly citizens hovers around 1.5%; however, rapidly developing nations such as China are experiencing even more accelerated rates of aging, exacerbating the strain on resources and infrastructure (Bloom et al., 2022). This trend is transforming family dynamics, with shrinking family sizes and shifting caregiving norms collectively amplifying the pressure on already overburdened support systems (Aboderin, 2004; Lei et al.,

2016). Pakistan is also facing this demographic transition. By 2050, the proportion of elderly individuals in Pakistan is projected to rise significantly, from 7% to over 15% of the total population, necessitating proactive policy interventions and resource allocation strategies (UNFPA, 2020).

Likewise, the demographic shift gives rise to significant biopsychosocial needs within the aging population. As the number of older adults increases, so does the demand for adequate medical care, social support systems, and age-friendly policies (Harper, 2014). Older adults are particularly vulnerable to a range of mental health challenges, with depression, anxiety, and dementia being the most prevalent (World Health Organization, 2021). Globally, approximately 15% of adults aged 60 plus experience mental health disorder, with depression being the leading cause of disability in this age group (WHO, 2021). Factors such as social isolation, chronic illnesses, and physical decline contribute substantially to poor mental health outcomes in later life (Courtin & Knapp, 2017). In Pakistan, these concerns are exacerbated by sociocultural and economic constraints, with research indicating that up to 40% of older individuals report symptoms of depression (Asif & Hussain, 2020). Access to mental health care remains limited due to stigma, lack of awareness, and insufficient geriatric services (Mirza & Jenkins, 2004). Additionally, traditional caregiving structures are weakening in the face of rapid urbanization, migration, and shifting family dynamics, leaving many elderly individuals without adequate familial support. Increasingly, older adults are being dislocated from their families and directed toward institutional care, such as old-age homes (National Institute on Aging, 2020).

Although institutional care for older adults is relatively common in Western countries, approximately 8–11% of individuals aged 65 years and above reside in institutional long-term care settings such as nursing homes or residential care (OECD, 2023). In contrast, institutional care remains uncommon in many Asian societies, including Pakistan, where deeply rooted cultural norms and a strong preference for joint family living discourage such arrangements (World Health Organization, 2015). Only a small proportion of elderly individuals in Pakistan consider institutional care as a viable option, due to cultural stigma and strong preferences for intergenerational co-residence (HelpAge International, 2018). Nevertheless, the gradual weakening of extended family structures and evolving caregiving responsibilities are slowly contributing to a shift in these preferences (Noreen et al., 2022). Those who transition to institutional care frequently experience challenges related to both physical health and emotional well-being, including poor mental health outcomes and difficulties in adjusting to life without the support of family members (Zaheer Ali et al., 2022). It is reported that psychosocial conditions in old-age homes in Pakistan remain a matter of concern, particularly regarding inadequate staffing, the absence of respite services, limited availability of emergency medical equipment, poor dietary provisions, and substandard cleanliness (HelpAge International, 2018).

Amid these mental health challenges, positive psychological resources such as wisdom, resilience, and life satisfaction have been identified as protective factors contributing to the overall well-being of older adults. Grounded in positive psychology theory (Seligman, 2002) and models of successful aging (Rowe & Kahn, 1997), these internal strengths enable individuals to maintain emotional stability, find meaning in life, and preserve psychological health in the face of adversity. Wisdom, often conceptualized as a multidimensional construct encompassing cognitive, reflective, and compassionate dimensions, has been associated with better emotional regulation, enhance coping ability, and greater subjective well-being in older adults (Ardelt, 2003; Webster, 2007). Similarly, resilience, defined as the capacity to adapt positively to life's challenges, is linked to improved mental health outcomes and higher life satisfaction in aging populations (Connor & Davidson, 2003). Empirical studies across diverse cultural settings confirm that higher levels of wisdom and resilience are associated with lower psychological distress and greater life satisfaction among the elderly (Zheng, Huang & Fu, 2020; Jeste et al., 2010). In Pakistan, emerging research echoes these findings, indicating that wisdom and resilience significantly predict life satisfaction in older adults (Hayat, Khan, & Sadia, 2017).

Importantly, caregiving contexts significantly shape psychological outcomes in later life. Elderly individuals residing in old-age homes frequently report lower levels of perceived well-being and psychological resources compared to those living with family, primarily due to reduced social integration, limited autonomy, and a lack of emotional support (Noreen et al., 2022; Ali & Hayat, 2025). A study by Saleem and Awan (2021) further demonstrated that institutionalized elderly in Pakistan exhibited higher levels of loneliness and depressive symptoms, alongside lower resilience in comparison to their community-dwelling counterparts. Despite these valuable insights, few studies have systematically investigated how psychological internal strengths such as wisdom and resilience operate across different caregiving environments or how these factors interact with mental health components, such as psychological distress in predicting life satisfaction (Batool et al., 2024; Aslam et al., 2020). This gap highlights the need for further investigation on psychosocial dynamics of aging within the Pakistani.

Building upon the previous research that explored the predictive roles of wisdom and resilience in relation to life satisfaction among elderly individuals in Pakistan (Hayat, Khan, & Sadia, 2017), the present study seeks to extend this inquiry by introducing psychological distress as a potential moderating variable. The earlier study provided valuable insights into how personal strengths such as wisdom and resilience contribute to life satisfaction in older adults, particularly within the Pakistani sociocultural context. However, it did not consider the possible influence of mental health risk factors, such as psychological distress, which is highly prevalent in older populations. This is especially true for institutionalized elders, who frequently experience elevated levels of loneliness, social isolation, and emotional strain (Tariq et al., 2023; Khan & Mahmood, 2024) have low levels of life satisfaction. Given its potential to alter life satisfaction, the moderating role of psychological distress warrants further empirical examination among elderly.

Furthermore, while the earlier study was limited to examining direct associations among variables, the present research adopts a moderated mediation framework (as illustrated in Fig. 1) to test whether psychological distress interacts with wisdom and resilience in predicting life satisfaction. This continuation study also seeks to compare these associations across two distinct caregiving settings – old-age homes and community dwelling elderly, thereby offering a more nuanced understanding of how caregiving environment and mental health risks jointly influence well-being and life satisfaction outcomes in later life. By addressing these previously unexplored relationships, the study not only extends earlier findings but also contributes to the growing body of gerontological psychology literature in Pakistan, with potential implications for culturally sensitive mental health interventions and caregiving strategies.

In the line of these objectives, it was hypothesized that psychological distress would be negatively associated with wisdom, resilience and life satisfaction (as shown in Fig. 1). It is also hypothesized that psychological distress will moderate direct and indirect relationships, with weaker associations observed among those reporting higher distress.

Methods

To assess the relationship between the study variables, a correlational research design was employed using a cross-sectional survey method using the same dataset reported in Hayat (2017). Data was collected from the two adjoining cities of Pakistan: Islamabad and Rawalpindi. The study received ethical approval from the appropriate institutional review board. Each participant was asked to provide a written and very consent before participating in the research. Demographics of the studies are explained in detail in the prior study (Hayat et al., 2017).

Participants

The data for community dwelling elderly was collected by employing purposive sampling technique, selecting random elderly individuals who were older than 60 years of age and were cognitively sound. A total of *n* = 124 samples were collected from the community dwelling elderly population. The data for the old-age shelter homes elderly individuals was collected using stratified random sampling method by first identifying all working oldage shelter homes and then randomly selecting elderly individuals who were cognitively sound and older than 60 years of age. A total *n* = 88 samples were collected from the old-age shelter homes.

Measures

Wisdom

The Self-Assessed Wisdom Scale (SAWS; Webster, 2007), created by Jeffery D. Webster in 2003 and updated in 2007, was used to measure wisdom. It consists of 40 items evaluated of a Likert scale of 5-point rating. The five main dimensions of the scale are critical life experiences, emotional regulation, reminiscence and reflection, openness to experience and humour. It evaluates a multifaceted construct of wisdom as perceived by the individuals themselves. The higher computed scores show greater wisdom. The Cronbach's alpha for this scale in present sample was *a* = .91.

Resilience

Resilience was measured by using ego resilience scale (ER-89) developed by Kremen and Block (1996). The study used the Urdu language translated version (Aslam, 2007). The self-report measure consists of 14 items on a 4-point Likert scale (1 = does not apply at all to 4 = applies very strongly). The maximum score on the scale is 56 and 14 is the minimum score with no negative scoring on the scale. High scores reflect greater resilience. The Cronbach's alpha for this scale in the present sample was *a* = .79

Life Satisfaction

The Satisfaction with Life Scale (SWLS) created by Diener, Emmons, Larsen, and Griffin (1985), was used to measure using Satisfaction with Life Scale (SWLS). Each of the 5 items on the measure is assessed on a 7-point Likert scale, with 1 denoting "strongly disagree" and 7 denoting "strongly agree". Higher scores indicate better life satisfaction; the total score runs from 5 to 35. In the present study, Urdu language translated version scale (Batool and Khalid, 2012) was used. Cronbach's alpha for this measure was *a* = .88.

Psychological Distress

The Depression Anxiety Stress Scale (DASS-21) was utilized to measure psychological distress among the participants. The scale was created by Lovibond and Lovibond in 1995. In the study, Urdu translated version adapted by Aslam (2007). The scale is a self-report measure that comprises of 21 items ranging on a 4-point Likert scale. The scale is divided into 3 subscales respectively as depression (items 3,5,10,13,16,17,21), Anxiety (2,4,7,9,15,19,20) and Stress (1,6,8,11,12,14,18). The total score is computed and divided by 2. Higher scores on each subscale indicate greater levels of distress. Cronbach's alpha for the total scale was *a* = .93 in this sample along with its subscales having alpha reliability such as Depression *a* = .86, Anxiety *a* = .74, and stress *a* = .84.

Statistical Analysis

In the present study the statistical package for the social sciences (SPSS) was used to analyze predicted hypotheses. The study's primary variables and participants demographics were summed up using descriptive statistics. Data was checked for normality, linearity, homogeneity of variance, and multicollinearity before performing inferential analyses. To check the internal consistency of the instruments used to measure variables, Cronbach's alpha test was conducted to check reliability analyses. The relationship among variables were tested using Pearson Correlation analysis on SPSS. Hierarchical regression, t-test and A-Nova were run through the data to assess the effect size and differences. Moderated mediation analysis was conducted using PROCESS macro version 4.2 (Hayes, 2022), specifically employing Model 59 to test whether psychological distress moderates the direct and indirect effects of wisdom on life satisfaction through resilience in continuance of the previous study (Hayat et al., 2017).

Tables 1

Sociodemographic characteristics and the distribution of Life satisfaction and psychological distress among elderly living in old-age homes and in community (N = 212)

Socio-demographic	*n* (%)	LS (*M* + *SD*)	F/t	*p*	PD (M + SD)	F/t	*p*	Dep (M + SD)	*F/t*	*P*	Anx (M + SD)	*F/t*	*P*	*Sts* (*M* + *SD*)	*F/t*	*P*
Place of residence			6.49	0.00		3.44	0.00		5.34	0.00		.30	.76		3.23	0.00
Community	124 (78%)	16.34 ± 5.53			17.41 + 12.66			5.95 + 5.60			4.15 + 3.31			7.31 + 4.77		
Type of family setting			0.95	0.34		3.70	0.00		2.95	0.00		4.03	0.00		3.40	0.00
Nuclear Family	84 (67%)	17.86 ± 5.16			19.01 + 11.42			6.01 + 4.96			5.28 + 3.42			7.71 + 4.14		
Joint Family	40 (32%)	16.97 ± 4.22			11.17 + 10.07			3.35 + 4.04			2.77 + 2.81			5.05 + 3.89		
Gender			0.957	0.330		2.27	.02		2.79	0.00		1.77	.07		1.57	0.11
Male	68 (54%)	18.38 ± 4.69			14.29 + 11.27			4.04 + 4.51			3.97 + 3.38			6.27 + 4.38		
Female	56 (45%)	16.68 ± 4.95			18.92 + 11.46			6.40 + 4.92			5.50 + 3.40			7.47 + 4.00		
Old-age Homes			6.49	0.00		3.44	0.00		5.34	0.00		.30	.76		3.23	0.00
Old age Homes	88 (22%)	14.90 ± 5.46			20.55 + 11.68			7.73 + 5.37			4.73 + 3.17			8.08 + 4.22		
Gender			1.32	.19		.57	.57		1.08	.28		.21	.83		.34	.73
Male	51 (58%)	13.64 ± 5.44			21.50 + 13.31			8.44 + 5.95			4.38 + 3.25			8.67 + 4.96		
Female	37 (42%)	12.16 ± 5.13			23.05 + 11.73			9.78 + 5.45			4.24 + 2.75			9.02 + 4.43		

Note: LS-Life Satisfaction, PD-Psychological Distress, Dep- Depression, Anx-Anxiety, Sts=Stress

Results

Sociodemographic and differences of Variables (*N* = 212).

Sociodemographic group comparisons were conducted to examine differences in life satisfaction, psychological distress, and sub-scale (depression, anxiety, and stress) among elderly individuals residing in communities and old-age homes (*N* =212).

Table 1 shows that a significant difference in life satisfaction was observed based on place of residence, with community-dwelling elderly reporting higher life satisfaction (*M* = 16.34, *SD* = 5.53) than those living in old-age homes (*M* = 14.90, *SD* = 5.46), *F* (1,210) = 6.49, *p* < .001. Similarly, psychological distress was significantly lower in the community group (*M* = 17.41, *SD* = 12.66) compared to the old-age home residents (*M* = 20.55, *SD* = 11.68), *F* (1, 210) = 3.44, *p* < .001. Among the distress subscales, depression differed significantly by place of residence, *F* (1,210) = 5.34, *p* < .001, with community elderly reporting lower depression (*M* = 5.95, *SD* = 5.60) than those in old-age homes (*M* = 7.73, *SD* = 5.37). No significant difference was found in anxiety levels, *F* (1,210) = 0.30, *p* =.76, while stress was significantly higher in old-age homes (*M* =8.08, *SD* = 4.22) than in the community (*M* = 7.31, *SD* = 4.77), *F* (1,210) = 3.23, *p* < .001.

Within the community group, the type of family setting did not significantly affect life satisfaction, *F* (1, 122) = 0.95, *p* =.34, but significantly influenced psychological distress and its subscales. Elderly living in nuclear families reported higher psychological distress (M = 19.01, SD = 11.42) than those in joint families (*M* = 11.17, *SD* = 10/07), *F* (1,122) = 2.95, *p* < .001, anxiety, *F* (1,122) = 4.03, *p* < .001, and stress, *F* (1, 122) = 3.40, *p* < .001, with elderly in nuclear families reporting higher scores on all three indicators.

Regarding gender differences in the community sample, life satisfaction did not significantly differ between males (*M* = 18.38, *SD* = 4.69) and females (*M* =16.68, *SD* = 4.95), *t* (123) = 0.96, *p* = .33. However, psychological distress was significantly higher among females (*M* = 18.92, *SD* = 11.46) than males (*M* = 14.29, *SD* = 11.27), *t* (123) = 2.27, *p* = .02. Depression also differed significantly, *t* (123) = 2.79, *p* < .001, with higher scores among females, while anxiety and stress did not show significant gender differences (*p* > .05).

In contrast, among residents of old-age homes, there was neither life satisfaction nor psychological distress and its subscales differed significantly by gender ($p > .05$). Both male and female residents exhibited comparably lower life satisfaction and higher psychological distress.

Bivariate Correlations Analysis

Bivariate correlation analysis (as shown in Table 2) was conducted to examine the relationships among wisdom, resilience, life satisfaction, and psychological distress (including depression, anxiety, and stress) in elderly residing in communities (n =124) and old-age homes (n =88).

Table 2

Bivariate correlation among Wisdom, Resilience, Life Satisfaction and Psychological Distress among elderly (N = 212)

Elderly in Communities (*n* = 124)							
	1	2	3	4	5	6	7
1. Life Satisfaction	-	.16*	.18*	-.41**	-.44**	-.37**	-.33**
2. Resilience		-	.44**	-.23**	-.27**	-.14	-.19*
3. Wisdom			-	.11	-.00	.17	.17
4. Psychological Distress				-	.94**	.90**	.91**
5. Depression					-	.81**	.78**
6. Anxiety						-	.73**
7. Stress							-
Elderly in Old-age Homes (*n* = 88)							
1. Life Satisfaction	-	.33**	.31**	-.56**	-.56**	-.41**	-.54**
2. Resilience		-	.37**	-.17*	-.19*	-.00	-.20*
3. Wisdom			-	-.18*	-.23*	-.05	.18
4. Psychological Distress				-	.96**	.86**	.94**
5. Depression					-	.76**	.86**
6. Anxiety						-	.73**
7. Stress							-

Note: ** $p < 0.01$

In the community sample, life satisfaction demonstrated a significant positive correlation with resilience ($r = .16$, $p < .01$) and wisdom ($r = .18$, $p < .05$), and a strong negative correlation with psychological distress ($r = -.41$, $p < .01$), depression ($r = -.44$, $p < .01$), anxiety ($r = -.37$, $p < .01$), and stress ($r = -.33$, $p < .01$). Resilience was positively associated with wisdom ($r = .44$, $p < .01$) and negatively with psychological distress ($r = -.23$, $p < .01$), depression ($r = -.27$, $p < .01$), and stress ($r = -.19$, $p < .01$). Wisdom, however, showed no significant associations with psychological distress or its subcomponents.

In the old-age homes sample (n = 88), life satisfaction demonstrated stronger positive correlations with both resilience ($r = .33$, $p < .01$) and wisdom ($r = .31$, $p < .01$), and a notably stronger negative correlation with psychological distress ($r = -.56$, $p < .01$), depression ($r = -.56$, $p < .01$), anxiety ($r = -.41$, $p < .01$), and stress ($r = -.54$, $p < .01$) compared to the community group. Additionally, resilience was positively related to wisdom ($r = .37$, $p < .01$) and negatively to distress ($r = -.17$, $p < .05$), depression ($r = -.19$, $p < .01$), and stress ($r = -.20$, $p < .01$). Wisdom also showed a small but significant negative association with distress ($r = -.18$, $p < .05$) in this group.

Psychological distress showed strong positive intercorrelations with its subcomponents in both groups with coefficients ranging from $r = .73$ to .96, confirming the coherence of the composite distress construct in elderly populations. These findings collectively indicate that while resilience and wisdom contribute to greater life satisfaction in both groups, their protective effects appear more pronounced in elderly individuals residing in old-age homes, where distress tends to be higher.

Mediation among elderly living in old-age homes (n = 88)

Table 3

Path Analysis Resilience as mediator between Wisdom and Life Satisfaction among elderly living in old-age homes (n = 88)

Path	*B*	*SE*	*t*	*p*	*95% CI (LLCI, ULCI)*
Total Effect (Path c: Wisdom → Life Satisfaction)	0.15**	0.03	5.06	.000	[.09, .21]
Direct Effect (Path c': Wisdom → Life Satisfaction controlling for Resilience)	0.17	0.24	0.71	.47	[-0.03, 0.06]
Path a (Wisdom → Resilience)	0.15**	0.03	5.06	.000	[.09, .21]
Path b (Resilience → Life Satisfaction)	0.35**	1.00	4.93	.000	[.21, .50]
Indirect Effect (Path a × b: Wisdom → Resilience → Life Satisfaction)	0.05**	0.01	3.50	.000	[.02, .08]

Note: Mediation Analysis *(author/s)*

A mediation analysis was conducted to examine whether resilience mediates the relationship between wisdom and life satisfaction (Table 3). The total effect of wisdom on life satisfaction was significant (*B* = 0.15, *SE* = 0.03, *t* = 5.06, *p* < .001, 95% *CI* [.09, .21]). However, when resilience was included as a mediator, the direct effect of wisdom on life satisfaction became non-significant (*B* = 0.17, *SE* = 0.24, *t* = 0.71, *p* = .47, 95% *CI* [-.03, .06]).

Wisdom was a significant positive predictor of resilience (*B* = 0.15, *SE* = 0.03, *t* = 5.06, *p* < .001), and resilience, in turn, was a significant positive predictor of life satisfaction (*B* = 4.98, *SE* = 1.00, *t* = 4.93, *p* < .001). The indirect effect of wisdom on life satisfaction through resilience was also significant (*B* = 0.05, *SE* = 0.01, 95% *CI* [.02, .08]), indicating that resilience fully mediated this relationship.

MODEL 59: Psychological Distress (Moderated Mediation)

In the current study, a moderated mediation analysis using PROCESS Macro Model 59 (Hayes, 2022) was conducted to examine whether psychological distress moderates the indirect effects of wisdom on life satisfaction via resilience (Table 4).

Table 4

Hierarchal Regression Analysis of psychological distress as Moderated Mediation (MODEL 59; Hayes, 2022) with wisdom, resilience and life satisfaction among elderly in old-age homes (n = 88).

Outcome: Resilience					
Variable	***B***	***SE***	***t***	***LLCI***	***ULCI***
Wisdom	0.13**	0.061	2.17	0.0117	0.258
Psychological Distress	-0.19	0.58	-0.33	-1.355	0.967
Wisdom* Psychological Distress	0.0006	0.003	0.20	-0.005	0.006
Outcome: Life Satisfaction					
Variable	***B***	***SE***	***t***	***LLCI***	***ULCI***
Wisdom	0.024	0.032	0.769	-0.0390	0.088
Resilience	0.393**	0.109	3.595	0.175	0.610
Psychological Distress	0.259	0.273	0.946	-0.285	0.803
Resilience*Psychological Distress	-0.007**	0.002	-2.870	-0.013	-0.002
Wisdom*Psychological Distress	-0.000	0.0014	-0.427	-0.003	0.002

Note:

Results indicated that wisdom significantly predicted resilience (*B* = 0.13, *SE* = 0.061, *t* = 2.17, *p* < .05, 95% *CI* [0.012, 0.258]), but psychological distress did not moderate the relationship between wisdom and resilience (*B* = 0.0006, *SE* = 0.003, *t* = 0.20, *p* > .05, 95% *CI* [-0.005, 0.006]).

In predicting life satisfaction, resilience emerged as a significant positive predictor (*B* = 0.393, *SE* = 0.109, *t* = 3.60, *p* < .001, 95% *CI* [0.175, 0.610]). Importantly, the interaction between resilience and psychological distress was significant (*B* = -0.007, *SE* = 0.002, *t* = -2.87, *p* < .01, 95% *CI* [-0.013, -0.002]), indicating that the positive effect of resilience on life satisfaction was weakened at higher levels of psychological distress. Having psychological distress as a moderator, wisdom direct effect on psychological distress becomes non-significant (*B* = -0.000, *SE* = 0.0014, *t* = -0.427, 95% *CI* [-0.003, 0.002]), showing complete mediation having psychological distress moderating the effect of resilience on life satisfaction.

Table 5

Conditional effect of psychological distress between resilience and life satisfaction among elderly living in old-age homes (n =88)

Psychological Distress	Effect (*B*)	*SE*	*t*	*p*	LLCI	ULCI
9.000 (Low)	0.322	0.088	3.65	0.000	0.147	0.49
22.000 (Medium)	0.220	0.06	3.54	0.000	0.097	0.344
36.000 (High)	0.111	0.04	2.22	0.028	0.012	0.210

Conditional effects analysis (as shown in Table 5, Figure 2) revealed that the effect of resilience on life satisfaction was strongest at low levels of psychological distress (B = 0.322, p < .001) and progressively diminished at medium (B = 0.220. p < .001) and high levels of distress (B = 0.111, p <.05).

As depicted in figure 3, a moderated mediation analysis using Hayes' (2022) PROCESS macro-Model 59 was conducted to assess whether resilience mediates the relationship between wisdom and life satisfaction, and whether psychological distress moderates the indirect pathways. The pathway from wisdom to resilience ($a_{1)}$ was significant (B = 0.13, p = .03), while the interaction between wisdom and psychological distress on resilience (a_3) was non-significant (B = 0.0006, p =.83).

The pathway from resilience to life satisfaction (b_1) was significant (B = 0.393, p < .001). Importantly, the interaction between resilience and psychological distress (b_3) was also significant (B = -0.007, p = .005), indicating that the positive association between resilience and life satisfaction was weaker at higher levels of psychological distress.

The direct effect of wisdom on life satisfaction (c') was non-significant (B = 0.024, p = .44), whereas the total effect (c) remained significant (B – 0.15, p =.0005), confirming that resilience fully mediated the relationship between wisdom and life satisfaction. The non-significant moderation on then *a* path and significant moderation on the *b* path collectively support a moderated mediation model, in which the strength of the indirect effect of wisdom on life satisfaction via resilience depends on the level of psychological distress.

Discussion

The present study investigated the relationship between psychological distress, resilience, wisdom, and life satisfaction among elderly adults residing in institutionalized elderly residents and elderly residing within communities (N = 212). The data was acquired from Islamabad and Rawalpindi cities. The data for community dwelling elderly people was collected by employing purposive sampling technique, selecting random elderly individuals older than or equal to 60 years and were cognitively sound. A total of n = 124 samples were collected from the community dwelling elderly population. The data for the old-age shelter homes was collected using stratified random sampling method by first identifying all working old-age shelter homes and then randomly selecting elderly individuals who were cognitively sound and older than or equal to 60 years. The data was tested using SPSS-27 and PROCESS macro-Model 59 (Hayes, 2022).

The study extends the earlier findings of (*author/s)* by implementing moderation model through psychological distress (Fig. 1). The previous study demonstrated that resilience mediated the relationship between wisdom and life satisfaction among institutionalized residents in shelter homes (n = 88). Consistent with previous literature (Ardelt, 2002; Jeste et al., 2010), wisdom was positively associated with resilience and life satisfaction, while resilience itself significantly predicted higher life satisfaction among institutionalized elderly sample (n = 88) *(author/s).* These findings reinforce the conceptualization that wisdom promotes adaptive coping mechanisms, particularly resilience, which in turn enhances overall well-being and life satisfaction in later life (Smith et al., 2008).

In the present follow-up study, as hypothesized, psychological distress is tested as a risk factor among the positive predictors of life satisfaction. It is found through the moderated mediation analysis (Model 59; Hayes, 2022) that the psychological distress significantly moderated the path from resilience to life satisfaction among institutionalized elderly sample n = 88 (as shown in Fig. 3), such that the positive impact of resilience on life satisfaction diminished at higher levels of distress. This aligns with existing evidence that psychological distress undermines the positive effects of resilience and on overall well-being in older adults (Macleod et al., 2016). However, no significant moderation was found on the path from wisdom to resilience or the direct path from wisdom to life satisfaction. This suggests that distress primarily interferes the resilience and life satisfaction, rather than the development of resilience itself (Table 4). These findings highlight a nuanced psychological mechanism among elderly individuals: while wisdom fosters resilience, it is the sustained functioning of resilience in the presence of psychological distress that ultimately determines life satisfaction. Likewise, moderation mediation model was also tested upon elderly residing within communities n = 124, but wisdom showing non-significant relationship (Table 2) with psychological distress showed non-significant results of moderated mediation Model 59 (Hayes, 2022).

Furthermore, the sociodemographic variables demonstrated significant association (as shown in Table 1). Elderly individuals residing in community settings and nuclear families reported higher life satisfaction and lower levels of psychological distress, depression, and anxiety compared to those in old-age homes and joint families. Additionally, male participants reported higher life satisfaction and lower distress than female participants. These findings are aligned with previous evidence from Pakistani and South Asian elderly populations, where living arrangements and family structures exert a substantial influence on subjective well-being and mental health (Sabzwari & Azhar, 2010; Tariq et al., 2023). Together, these results underscore the multidimensional nature of psychological adjustment in late life, shaped by individual psychological resources like wisdom and resilience, contextual distress, and socio -environmental factors.

However, the study limits causal inference, therefore, longitudinal research is warranted to examine changes in resilience and life satisfaction over time in response to fluctuations in wisdom and psychological distress. Secondly, the study employed self-report measures, raising the possibility of social

desirability bias, particularly within collectivistic settings like Pakistan (Batool & Khalid, 2012). Future research should consider mixed method designs to capture the lived experiences of elderly individuals, particularly those residing in institutional settings. Expanding the sample to include rural populations and exploring other contextual moderators such as perceived social support and religiosity could provide a more comprehensive understanding.

Despite having limitations, the study provides theoretical and practical implications in the field of geriatric psychological care in Pakistan. Interventions targeting resilience enhancement and distress management may thus be particularly valuable for improving elderly well-being. Government must regularly embody activities to bolster resilience enhancing therapies among elderly individuals, especially in the old-age shelters homes. Gender specific interventions must be targeted. Awareness campaigns and policy guidelines must be strengthened to protect the internal and external capacity and coping mechanisms of elderly individuals in Pakistan. The research provides a contribution to the field of gerontology.

In conclusion, the study aimed to highlight psychological risk factors that can provide hinderance and may cause blockage for elderly population to feel self-resurrected and accomplished in the end-of-life years. The need for continuous study was essential mainly because it completes the prior findings by adding a risk factor into the positive predictors of life satisfaction among elderly population living in old-age shelters and communities. Taken together the study underscores the need for culturally sensitive, resilience enhancing interventions and mental health support systems that address distress and promote adaptive aging within collectivistic societies.

Declarations

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Author's contributions: SZH: Conceptual design and framework/Model testing, data curation, and writing; **SK:** Supervision; **MS**: Data collection and compilation of data, proofing; **NN**: Article compilation and assistance.

Ethics approval and consent to participate: The study was reviewed and approved by Internal Ethics Review Board of National Institute of Psychology (NIP), Quaid-e-Azam University, Islamabad, Pakistan. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Written informed consent was obtained from all individual participants included in the study.

Consent for publication: Not Applicable.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Competing Interests: There are no competing interests to declare.

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Figures

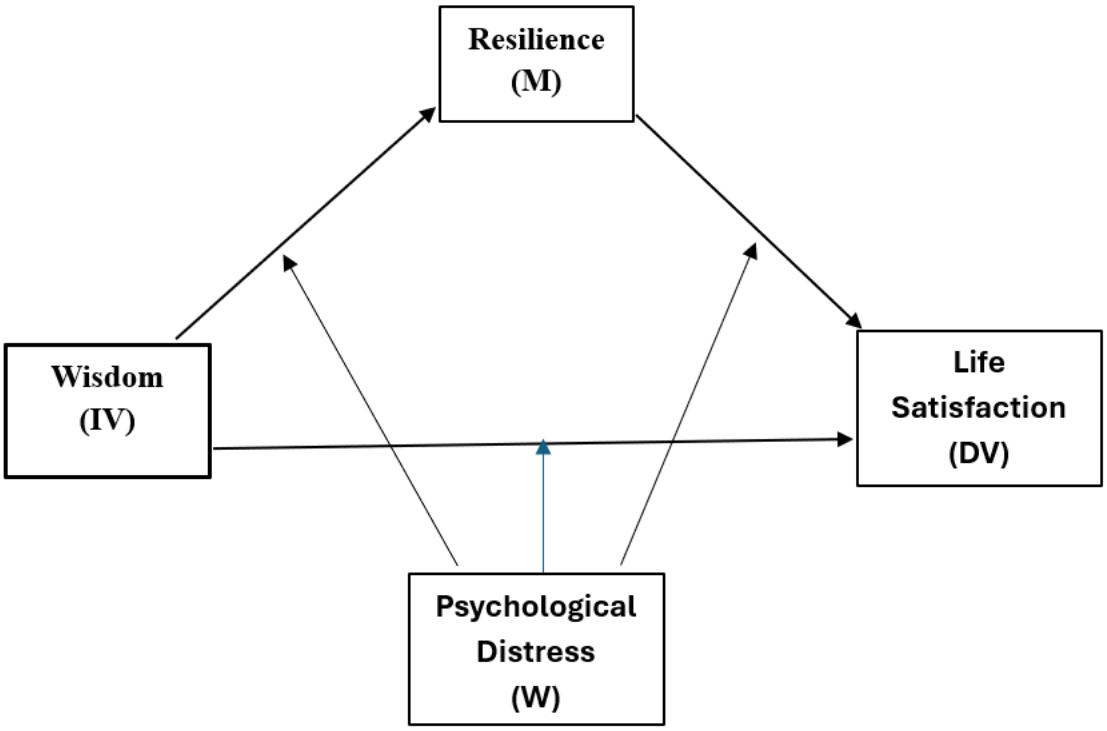


Figure 1

Conceptual diagram

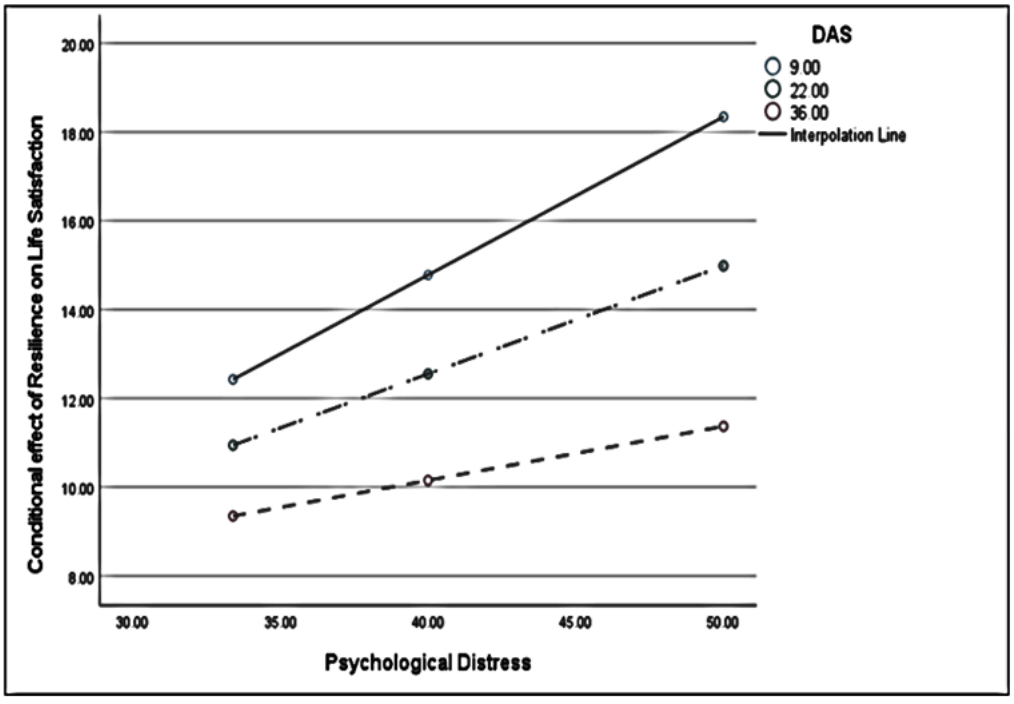


Figure 2

Conditional effect of Resilience on Life Satisfaction at varying levels of Psychological Distress (*n* = 88)

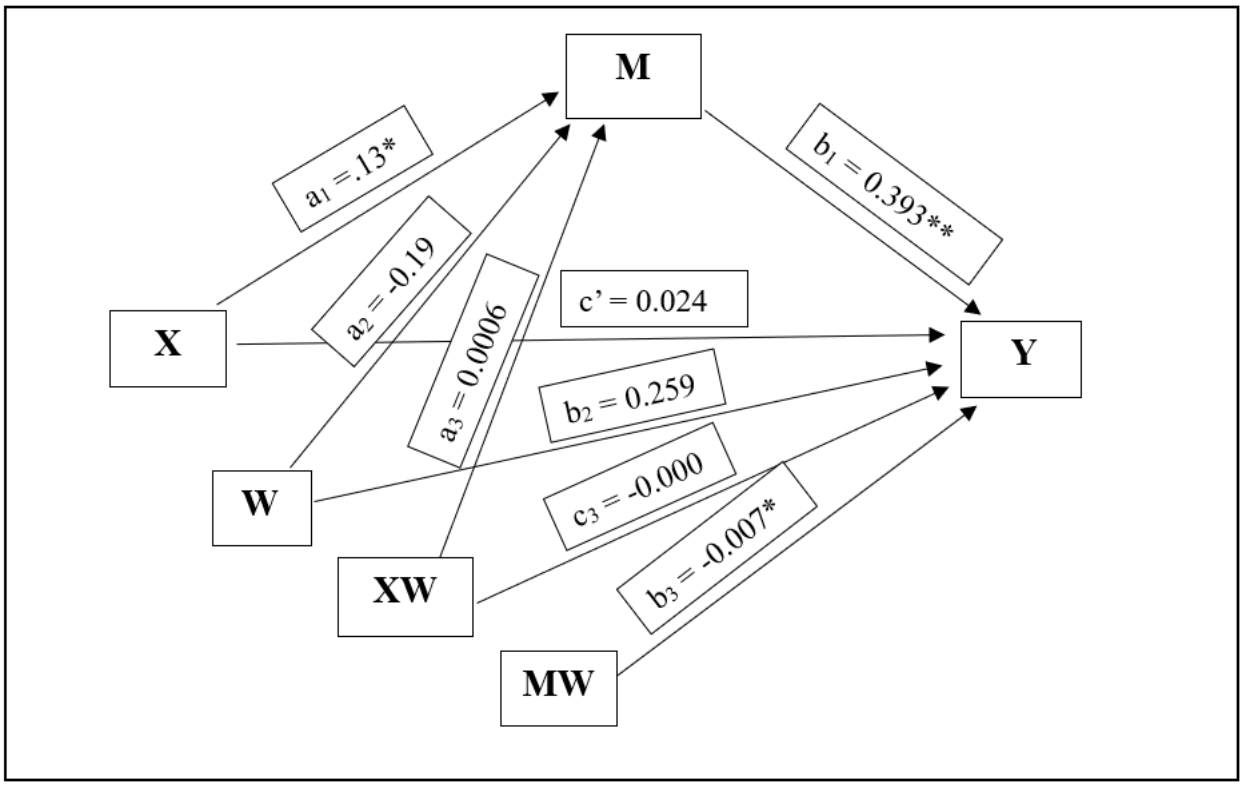


Figure 3

Statistical diagram of Moderated Mediation (Model 59; Hayes, 2022)