

**NEGATIVE LIFE EVENTS, POSITIVE AND
NEGATIVE AFFECT AND RESILIENCE IN
OLDER ADULTS**



KANZA CHAUDHARY

**DEPARTMENT OF APPLIED PSYCHOLOGY
KINNAIRD COLLEGE FOR WOMEN,
LAHORE, PAKISTAN
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AFFECT AND RESILIENCE IN OLDER ADULTS**



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**BY
KANZA CHAUDHARY**

**DEPARTMENT OF APPLIED PSYCHOLOGY
KINNAIRD COLLEGE FOR WOMEN, LAHORE**

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“All changes suggested by examiners during defense are incorporated in this final copy”


Name of Student: Kanza Chaudhary

Signature:  _____

Name of Supervisor: Zara Haroon

Signature:  _____

Name of HOD: Dr. Afsheen Gul

Signature:  _____

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It is certified that Ms. Kanza Chaudhary of BSc (Hons) (session 2019 – 2023), Department of Applied Psychology has carried out research work entitled **“Negative life events, positive and negative affect and resilience in older adults”** under my supervision.

It is assured that research work is original and has not yet been published anywhere else.



Ms Zara Haroon

Dated: 16-5-2023

Supervisor

Lecturer

Kinnaird College for Women, Lahore



Dr Afsheen Gul

Head of Applied Psychology Department

Kinnaird College for Women, Lahore

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Program: **BSc (Hons) Applied Psychology**

Signature:



Signature of Supervisor



Signature of HOD



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Name: Kanza Chaudhary



Abstract

This study aimed to examine the relationship of negative life events, positive and negative affect and resilience in older adults. It was hypothesized that positive affect and/or negative affect is likely to mediate the relationship between negative life events and resilience. A sample of 103 older adults (calculated by G-Power Analysis) ($MA= 67.74$; $SD= 7.22$) comprising of both males and females was obtained from Lahore, Pakistan, through purposeful convenience sampling. In order to gather data, Geriatric Adverse Life Events Scale (GALES; Devanand et al., 2002), Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1988), Brief Resilience Scale (BRS; Smith et al., 2008) and demographic form were administered. Cross-sectional research design was employed. Statistical Package for Social Sciences (SPSS) was used for data analysis through descriptive and inferential statistics. Results of the correlation analysis revealed a significant relationship of resilience with negative life events and positive and negative affect. According to the parallel mediation model, the affects, positive and negative do not significantly explain the relationship between negative life events and resilience. Moreover, gender differences revealed higher scores of negative affect in females as compared to males while males scored higher on resilience than females. This study has important findings that have implications in research as well as practice to place importance on the mental health and well-being of older individuals, especially due the higher frequency of reported negative events in old age. Future researches may need to focus on other factors that tend to play a more significant role in enhancing resilience in the face of adversity of negative life events factors other than affect to help older adults to cope and adapt to their stressors.

Keywords: negative life events, positive affect, negative affect, resilience, old age

**Negative Life Events, Positive and Negative Affect and Resilience in Older
Adults**

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List of Abbreviations

AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
BRS	Brief Resilience Scale
DV	Dependent Variable

GAD	Generalized Anxiety Disorder
GALES	Geriatric Adverse Life Events Scale
IV	Independent Variable
MDD	Major Depressive Disorder
NA	Negative Affect
NLEs	Negative Life Events
PA	Positive Affect
PANAS	Positive and Negative Affect Schedule
QoL	Quality of Life
rMDD	Recurrent episodes of Major Depressive Disorder
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

Chapter 1

Introduction

Background

There has been a rapid increase in the world in the population of older adults above 60 years of age. According to WHO (2020), it is estimated to increase to 2.1 billion by 2050 from 1 billion in 2019 especially in the case of developing countries. This aging population is a major challenge for the developing as well as the developed countries.

In Pakistan, the older adults population above 60 years was reported at 6.76 % in 2021, according to the World Bank collection of development indicators, compiled from officially recognized sources (World Bank, 2023). Focusing this study on the Pakistani society, which is traditionally a collectivist culture, the elders are supposed to be respected and the care of old people is considered a family responsibility. However, the same issues are being faced as times are changing (Azeem & Naz, 2015). With the change in lifestyle, the older adults in Pakistan are confronted with a decline in the traditional family patterns which is where they expected love, care and respect. Due to urbanization and the movement of younger individuals to career oriented lives has led to the erosion of traditional caring and support from the extended family systems. The older individuals consider themselves experiencing condensed centrality due to the lack of physical, psychological, emotional and social support by their families (Cassum et al., 2020).

When individuals reach later life, they encounter various stressful life instances. They may endure losses of their loved ones, face economic and social difficulties post-retirement, accommodate with lower income status, decline in physiological and psychological capacity. The variety of behavioural difficulties and emotional disturbances are likely to pave the way to the disruption of mental health of elderly. As a result of these obstacles, older individuals can move on to develop several coping mechanisms/approaches to adapt successfully and deal with the changes in their life (Alvi et al., 2021).

It is important to note that aging is an unavoidable process in the form of stagnation and decline. Older people have the greater tendency to suffer due to many serious events that may include, bereavement of family, retirement issues in later age, routinely socioeconomic problem, physical health related problems, cognitive deficits like deterioration in memory, complicated nature of relationship with children, apprehensions about one's own residence and fear of coping with physical or mental disabilities. These events commonly result in developing depression due to loneliness and stress. (Dasti et al., 2019)

The most relevant psychological theory is presented by Erick Erikson (1950) whose psycho-social developmental stages elaborate the ageing process by explaining the conflicts in each developmental age and changes during the life course. It presents the last stage of integrity or despair directed towards older individuals from age 60 till death. The crisis they undergo is to achieve a sense of ego integrity and avoiding despair. It can be dealt with while reflecting back onto their life while trying to unify the events in their life and come to terms with them.

While they are successful, they experience ego integrity. On the contrary, facing difficulties in accepting the events in their lives and failing to successfully confront their past, some individuals get stuck in the psychosocial crisis. The negative consequences like regret lead up to despair. Constantly experiencing life challenges can amend an individual's social world as negative life events (Iqbal & Amin, 2018).

The focus of training older adults in order to manage the aging effects, they can be trained to focus on improving socialization to expanding their social network. It will not only enable them to engage in activities but also facilitate them to develop potential recovery skills from disturbance (Azeem & Naz, 2015). Thus, this capability of an individual to adapt and bounce back from stress, adversity, or difficult situations is called resilience. Wagnild and Young (1993) explicitly state that old people can adapt to life problems and troubles in a better way is they have higher resilience. Moreover, they are more content in their daily lives by having greater life value because improving coping resources like resilience can significantly reduce the influence of negative life events in older adults (Dasti et al., 2019). Consequently, a good and satisfactory life requires the inclination towards the positive side of wellbeing that can be achieved by resilience. In later part of life, it is a crucial motivator in order to lead a content life (Hayat et al., 2016).

Therefore, this research study aimed to investigate the relationship of the above-focused variables in elderly individuals on negative life events (NLEs), positive and negative affect and resilience. Another aim was to test the association

of the study variables with each other and to examine the inconsistent literature evidence between NLEs and resilience. This research study also focused to analyze the concrete evidence that positive and negative affect plays the role of mediating variables between NLEs (IV) and resilience (DV) in elderly adults.

Negative life events

Negative life events (NLEs) in an individual's life can be the changes that occurs in any aspect of their life whether their family, work or occupational environments. These stimulations can be perceived negatively resulting in psychological as well as physiological outcomes (Zhang et al., 1987).

It is widely acknowledged that the older adults have endured and lived many years of their life, they are the most likely to have gone through negative life events creating a toll on their well-being. The most common clusters for NLEs include the demise of a significant other, any severe illness to themselves, negative association with relationships, low socioeconomic status, unexpected tragedies or even abuse. NLEs are not only an important factor affecting individuals' physical and mental health, that can result in physiological arousals from the emotional reactivity to the negative events, such as depression and anxiety. Older adults tend to manage the negative life events under different circumstances and those who experience a mass of life challenges are at the greatest risk of emerging with a mental disorder. Other factors that diminishes the negative impact of stressful life events and increase the positive affect are increased social support, better life satisfaction and strong family bonds (Switers et al., 2021).

Positive and negative affect

A balance of positive and negative affect is essential in individuals in achieving an optimal sense of well-being. Positive affect (PA) can be defined as experiences that are on the pleasant and desirable side of the affect dimension such as, interest or joy while on the contrary, negative affect (NA) can be broadly referred to as the subjective unpleasant and undesirable experiences of mood and emotions, for example, being afraid or sad. (Watson & Clark, 1997). PA gives an individual more acceptable and pleasant experiences than negative affect. Positive affect is not just a distraction from the negative affect but rather reflects and individual's commitment to life and their sense of individuality. Moreover, since NA is one of the major factors that affect the mental health of people, it is accompanied by unpleasant situations like unpleasantness or unhappiness. The negative affectivity like hate or guilt are associated with many mental disorders. Negative affect is widely accepted as an important variable that predicts emotional regulation strategies. As indicated previously, positive and negative affect are not opposite or contradicting concepts, rather referred to as two very distinct dimensions (Kara & Gok, 2020).

Resilience

Resilience is the ability to recover and adapt to adversity, stressful or challenging conditions. It is the capacity to withstand and recover from challenging life events such as illness, loss of a loved one, financial difficulties, relationship breakdowns, or other significant stressors.

Resilience is not a fixed trait, but rather a fluid conception that can be developed, reinforced and strengthened over time. It involves developing skills, behaviors, and attitudes that help individuals cope effectively with stress and adversity. These skills may include problem-solving, emotional regulation, positive thinking, social support seeking, and taking care of one's physical health. It is a critical factor in determining how well older adults can maintain their physiological, psychological, and social well-being, despite the challenges that come with aging.

Resilience is an important trait as it can help individuals maintain a sense of well-being, remain productive, and continue to pursue their goals despite the difficulties they may face. It is particularly important in times of crisis, where individuals who are more resilient may be better equipped to manage the challenges and recover more quickly from setbacks. Resilience can be promoted and strengthened in older adults through various means, including engagement in physical and cognitive activities, social support, and healthy lifestyle choices such as proper nutrition and exercise. It can also involve engaging in mindfulness practices and seeking professional help when needed (Montero-Marin et al., 2015).

Theoretical framework

One of the most highlighted risk factor for mental disorders in older adults is the negative life events (NLEs) they encounter. Among the several theories proposed, one of the most widely recognized is "the transactional model of stress and coping". According to this model, it is stated that the stress that an individual

face is the results of a routine transactional process where an individual evaluates the weight of a situation and then identifies their own resources in order to deal with that stressor. In the Pakistani context this model can be helpful in explaining how the adverse events in life can lead to negative affectivity which results in decreased resilience. NLEs such as loss of loved ones or health related problems can be considered as stressors which can threaten the wellbeing of the older adults for which they engage themselves in problem focused coping strategies like social support, as the Pakistani culture is already a collectivist society. The positive and negative affect, they play an important part in this transactional process as well because when a stressor is considered a challenge rather than a threat, they are likely to experience more positive affect than negative affect engaging in problem focused coping rather than emotion focused. As for resilience, it is the result of the successful coping efforts done by individuals which has several influencing factors like the appraisal of the stressor, the level of resources and the amount of support (Lazarus & Folkman, 1986).

Another theoretical framework for this study is explained by “the broaden-and-build theory of positive emotions” which describes the concept that positive emotions, such as gratitude, joy and contentment can broaden the thought processes. This enables individuals to consider a wide range to possibilities which can then lead to the building of personal resources, such as resilience, social support, and positive relationships (Fredrickson, 1998). In the context of Pakistan, it is essential to understand that the positive emotions can result in improvement in physiology by stress reduction, boosting immune system and healthy eating

behaviours. It reduces the risk of cognitive impairments in old age as well. The theory also suggests that positive emotions can lead to resilience in order to increase resilience to face the adversity they encounter in old age like disability, illness or personal losses. By fostering positive emotions, overall quality of life can be improved which by increasing resilience- an important personal resource, can be developed by interventions aimed at improving wellbeing in older adults.

The present study can be conceptualized such that the negative events in life can result in positive or negative affect due to which an individual's capability to be resilient needs to be understood.

Chapter 2

Review of literature

This research study is being conducted with the aim to investigate the potential mediating role of positive and negative affect between negative life events (NLEs) and resilience in older adults. This section involves the review of the relevant literature to the current study.

International researches

A recent study tested the relationship of life events with the mental health of college students along with the influence of resilience and coping techniques on their relationship. A total of 595 students filled out the self-report questionnaires including the Adolescent Self-Rating Life Events Checklist (ASLEC), Resilience Scale for Chinese Adolescents (RSCA), Symptom Checklist-90 (SCL-90), and Simple Coping Style Questionnaire (SCSQ). The analysis was conducted using the SPSS software 26.0 version. The findings of the correlational analysis suggest a significant relationship established among the study variables and it was identified that between life events and mental health, negative coping and resilience were important mediating factors. Moreover, negative coping and resilience also play a chain mediation effect between life events and mental health (Ma & Sui, 2023).

A study inspected the relationship of NLEs and quality of life (QoL) with the potential mediating effects of social support and resilience in adolescents. The participants, $N = 3860$ were obtained by stratified cluster sampling from grades 4-

9 from a total of 8 schools in Qijiang District, Chongqing. The study included the self-report measures of the Adolescent Quality of Life Scale, the Adolescent Self-Rating Life Events Checklist, , the Resilience Scale for Chinese Adolescents and the Social Support Rating Scale. AMOS 26.0 software was used to conduct the analysis. The results of the Pearson correlational analysis presented significant relationships within the study variables where NLEs had a significant negative correlation with QoL, social support and resilience. The study also concluded that amongst the correlation of NLEs and QoL, resilience and social support had significant mediating effects (Tang et al., 2022).

McGinnis (2018) conducted two studies to develop a scale measure that can highlight factors which were associated with positive adaptation such as growth and thriving after facing adversity/NLEs. In Study I usefulness of Managing Life Survey (MLS) was measured while the second study had to measure and identify resilience subgroups to check its association with NLE across the subgroups. In Study I, 358 participants of ages 30-80 were taken to conduct a factor and reliability analysis of MLS. In Study II, a sample of 276 participants ranging from ages 45-76 years was obtained from Amazon's Mechanical Turk (AMT). For data collection, the participants filled out updated Managing Life Survey (MLS), Modified Life Event Survey, Brief Resilience Scale (BRS), Future Time Perspective (FTP), Short Grit Scale (Grit) and Subjective Well-being (SWL). Analysis was conducted using step wise regression and ANOVA. The findings indicated that the NLEs were the highest for the low

resilient group as well as the religious low resilient group, then came the high resilient group and the lowest NLE were of the medium resilient group.

Furthermore, Sheerin et al. (2018) conducted a research investigating the role of resilience as a protective factor as a result of stressful life events (SLE) against generalized anxiety disorder (GAD) and major depressive disorder (MDD). For the purposes of this study, from the Virginia Adult Twin Studies of Psychiatric and Substance Use Disorders, a sample of 7463 twins was taken. A twin sample of 7463 were taken. As it was a longitudinal study, mean age at Time 1 was 29.3 for Female-female and male-male twins while 35.1 for male-female twins. The data was collected by demographic questionnaire, symptom Checklist-90 (SCL-90), Stressful Life Events (SLEs), assessment of psychiatric disorder using DSM-III-R criteria and trait based variables from Life Orientation Test. SAS 9.4 was used to conduct stepwise regressions to model probability outcomes. The findings indicate that those with high resilience were shown to be less likely to develop MDD or GAD even after they experienced high SLEs.

Gonçalves et al. (2017) studied the correlation of NLE with resilience in students of higher education. A collective of 382 students were taken from a higher education institute located in Portugal comprising of the age group ranging from 20-24 years via convenience sampling technique. The measures that the study used were self-report measures including the adapted versions of the Resilience Scale and the Negative Life Events Inventory (NLEI). The study initially investigated the whether there was relationship between NLEs and resilience. Later, the association of resilience with sociodemographic and

academic variables as well. After Pearson correlation was run, a positive relationship between NLEs and resilience was found out. Independent sample t-test and One-way ANOVA was used to, identify significant relationships of resilience with age, area of residence and schools attended while insignificant with failed school years.

Furthermore, when understanding the relationship of NLEs and positive and negative affect, a research conducted by Schricker et al. (2023) aimed to examine the daily affect along with cognitions in two groups of individuals: one with recurrent episodes of major depressive disorder (rMDD) and the second group consisting of healthy control group. The study aimed to understand the effects of momentary cognitions on affect and vice versa while also investigating how daily events effect affect and cognitions in the two groups. The participant sample size, N= 102, underwent a 5 consecutive day phase of 'Ecological Momentary Assessment (EMA)' to indicate for the study variables ten times per day. The results showed that rumination negatively predicts PA in the rMDD group while higher positive thoughts was a predictor of increased PA and decreased NA. The daily negative events consequentially led to a strong increase in NA and rumination in rMDD group and positive events resulted in strong increase in PA and positive thoughts (Schricker et al., 2023).

In order to further emphasize on the relationship between NLE and NA, Yang et al. (2020) conducted the chain mediation analysis of NA and life satisfaction between the relationship of NLE and suicidal ideation. The participants were N= 566 undergraduate students who completed the self-report

measures of the Satisfaction with Life Scale (SWLS), Chinese version of the Adolescent Self-Rating Life Events Checklist (ASLEC), Positive and Negative Affect Schedule (PANAS) and Beck Scale for Suicide Ideation (BSI-CV). Data analysis was carried out using SPSS 22.0 and PROCESS 3.0 was used to conduct mediation analysis. The findings indicated that NLEs, NA and life satisfaction are related to suicidal ideation and significantly predict it as well. Moreover, the NA and life satisfaction mediated the relationship between NLEs and suicidal ideation (Yang et al., 2020).

In another study Brazilian sample of N=1080 socially vulnerable children and adolescents between ages 7-16 years were taken in order to conduct a cross-sectional assessment to check for associations between stressful events, life satisfaction and positive and negative affect. The sample has the vulnerability factors including belonging to a low socio economic status, low parent's education levels and their unemployment. The measures included Multidimensional Life Satisfaction Scale (MLSS), Inventory of Stressful Events in Childhood and Adolescence, and Positive and Negative Affect Schedule for Children. The results revealed that the individuals who lived with their parents experienced less stressful events and had less NA and more PA as compare to individuals who were institutionalized who reported stronger impact of stressful life events accompanied by high levels of NA (Wendt et al., 2019).

Lazić et al. (2018) investigated role of trait affectivity as a moderating variable between NLEs and life satisfaction. From the University of Novi Sad, 654 students were taken as a sample with an age range of 18-35 years. The

measures included Satisfaction with Life Scale (SWLS), Positive and Negative Affect Schedule (PANAS) and Serbian Life Events Check-List- Student Form (SLEC-SF). The results revealed the cumulative role of trait PA and NA. There was low life satisfaction in a high number of NLEs among the respondents who had an arrangement of low positive and negative trait affect. It is concluded by the findings that high PA is a protective factor independent of NA but low PA when combined with low NA, is a vulnerability factor.

Another study evaluated the trend of life satisfaction following major life events by evaluating moderating effects of personality characteristics with an exploratory aim to see changes in affectivity after the major life events. Sample was selected using random sampling technique of Australian households. Data was gathered by self-report measures of life satisfaction, affect and personality. The results indicated that variables associated with variations in life satisfaction were marriage, widowhood, childbirth and unemployment. The results find that the moderating effect of personality is not consistently associated to the degree of change in wellbeing after the major life events. An interesting finding was the association of certain life events with PA and NA. PA was significantly related to events like marriage and childbirth while event like widowhood was associated with higher PA than if their spouse had been alive (Anusic et al., 2014).

Further literature explores the link of positive and negative affect with resilience. Positive and negative affect were investigated by Babaei Nadiluei et al. (2022) to understand their relationship with resilience and ambiguity tolerance among the 2019 HIV patients. The study made use of the descriptive correlational

designs and data was collected using measures of resilience, ambiguity tolerance and PANAS. Data was analysed using multiple regressions to check the relationship and the findings suggest that the NA had a significant negative relationship to resilience and ambiguity tolerance while the PA was seen to be significantly positively associated with resilience and ambiguity tolerance. Furthermore, the study elaborated on the predictive properties of resilience and ambiguity for positive and negative affect.

PA was positively related to resilience according to a study by Pillay et al. (2022). It explored the role of PA, self-regulation and self-efficacy with resilience. From higher education institute in South Africa, the cross sectional survey design was employed on 255 female leaders. Measures employed were the adapted version of the General Self Efficacy Scale (GSES), the Resilience Scale (RS-14), Positive and Negative Affect Schedule (PANAS), and the Short Self-Regulation Questionnaire (SSRQ). Data was analyzed using SPSS 27 and PROCESS macro. The results concluded that self-efficacy and self-regulation showed significant mediation in the relationship between PA and resilience, and PA was in positive association with resilience as well, apart from the indirect effects (Pillay et al., 2022).

Furthermore, among N= 63 adolescents of addictive parents, the mediating effects of positive and negative affect in relationship with perceptions of parental involvement, autonomy support, and warmth with resilience was studied by Nikmanesh et al. (2020). The Adolescents were gathered for the study through convenience sampling technique from Zahak and Hirman which are located in

Sistan and Baluchestan provinces in Iran. Scales used in the study were: The Connor-Davidson Resilience Scale (CDRISC), the Positive and Negative Affect Scale (PANAS), and The Perceived Parenting Styles Scale. Using the data analysis techniques of correlation and path analysis, parenting styles had a significant direct relationship with PA and resilience. Moreover, it was also concluded that PA was a mediating variable for perceived parenting styles and resilience (Nikmanesh et al., 2020).

Goradel et al. (2016) performed a research to investigate overall resilience in primiparous women through the role of emotional intelligence and positive and negative affect as predictors. 122 women were selected as the sample for this study from the birth control health centers. The self-report measures consisted of the Trait Emotional Intelligence Questionnaire (TEIQue), PANAS and CD-RISC. Statistical Software for Social Sciences 20.0 was used to conduct Pearson correlation and multiple regression analyses. The findings indicative that resilience was positively correlated to PA and negatively correlated to NA.

Montero-Marin et al. (2015) aimed to investigate the mediation of positive and negative affect in associations of resilience and mindfulness with burnout types. An online survey was done to recruit 622 Spanish primary care physicians. The scales in this study included the Positive and Negative Affect Schedule (PANAS), Burnout Clinical Subtype Questionnaire (BCSQ-12), the Mindful Attention Awareness Scale (MAAS), and Connor-Davidson Resilience Scale (CD-RISC). Three software namely SPSS-19.0, AMOS-7.0 and FACTOR-9.0, were used to conduct the analysis. It was found that mindfulness and resilience

had a negative relationship with NA and only resilience had a positive relationship with PA

Indigenous researches

Referring to the research literature in Pakistan, a research conducted by Dasti et al. (2019), the relationship between psychosocial stress, resilience and depression amongst a sample of N= 90 elderly individuals with a mean age of 69 years, was examined. Among the variables the measures used in this cross-sectional research were: Elder Life Stress Inventory, Resilience State Trait Inventory, Geriatric Depression Scale and Demographic Information Questionnaire. For data analysis, Independent Sample t-test, Pearson Correlation and Backward Multiple Regression Analysis were used. Findings demonstrated negative relationships between psychosocial stress, resilience and depression. The analysis also suggests that the variable of depression is predicted by perceived stress and resilience among older adults.

In order to investigate the relationship of three study variables including resilience, wisdom as well as life satisfaction among two groups of elderly, those living with their families and those in old age homes, another study was conducted. In this cross-sectional study design, 212 elderly adults were taken ranging from ages 50-90 years using snowball and purposive sampling. The self-report measures used were Ego Resiliency Scale-89, Satisfaction with Life Scale and Self-Assessed Wisdom Scale. The findings stated that the variables of wisdom and resilience were significantly positively in relationship with life satisfaction.

Moreover, the relationship between wisdom and life satisfaction was mediated by resilience in the group of elderly subjects living with families (Hayat et al., 2016).

A study was conducted in order to investigate the level of resilience, depression and death anxiety among the two groups of elderly subjects: institutionalized and non-institutionalized elderly. The sample of N=80 participants above the age of 60 was used in the study at hand. Self-report measures of Death Anxiety Scale, Siddique Shah Depression Scale and State-trait Resilience Checklist were used in order to obtain data. In order to test the hypotheses, the analyses used were One-Way ANOVA and Independent sample t-test. The findings revealed that institutionalized elderly showcased higher symptoms of death anxiety and depressive, whereas, noninstitutionalized elderly scored high on state-trait resilience (Azeem & Naz, 2015).

Summary of literature review

According to previous literature, the findings of the studies are consistent that the relationship between NLEs and resilience is significant and the latter acts as a mediator of NLEs with QoL (Tang et al., 2022) and mental health (Ma & Sui, 2023). Literature states that in some studies more NLE experienced are associated with high resilience (Gonçalves et al., 2017; Sheerin et al., 2018) as well as low resilience in some studies (McGinnis, 2018). More NLEs led to an increase in the negative affectivity (Schricker et al., 2023; Yang et al., 2020) while less NLEs were related to less NA and more PA (Wendt et al., 2019) and higher scores on NLEs is associated with decreases in positive affectivity (Lazić et al., 2018; Anusic et al., 2014). Moreover, the literature also points out the significant

positive relationship between resilience with PA (Pillay et al., 2022) and negative significant relationship with NA (Goradel et al., 2016; Montero-Marín et al., 2015). Thus, a relationship model between the three variables is established that positive and negative affectivity is expected to serve as mediating variables amongst the relationship between NLEs and resilience.

Rationale

The older adults' population is significantly increasing throughout the world and now including Pakistan as well. Due to changing times and the movement to more career oriented lives, the older adults become vulnerable individuals because they are unable to get the social support they long for (Cassum et al., 2020). The despair takes a toll on them because of their crisis with the life events such as health problems and financial difficulties. However, there is gap in literature in understanding the association between NLEs, positive and negative affect and resilience in older adults residing in Pakistan. The gap is essential to address because Pakistan has a unique cultural context with limited research studies conducted on this specific population. Furthermore, interestingly other countries like China and United States have conducted various studies on negative affect and resilience, but it is unclear that these findings in the studies can be generalized to the Pakistani older adults' population as well due to these contextual differences. More importantly, previous literature has focused on negative affect and resilience but limited attention is given to the role of PA. The current study fills the theoretical gap in order to address and support the existing findings that positive affect is shown to have important implications to promote well-being and life quality in the older population (Azeem & Naz, 2015).

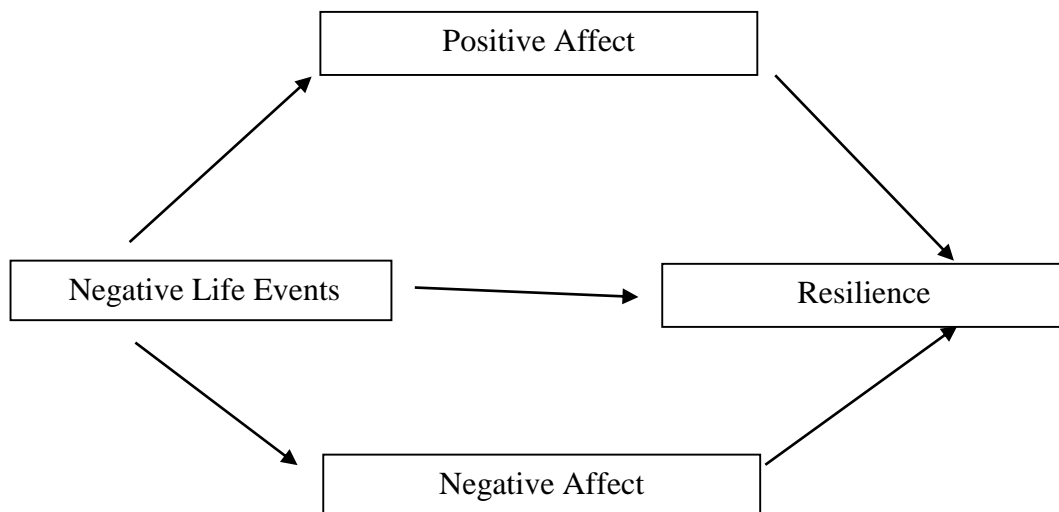
Hence, conducting this research study on NLEs, positive and negative affect and resilience, would address the several gaps in the literature, population, context and theory to contribute in understanding the factors influencing resilience in this population.

Proposed model

The following figure 2.1 illustrates the conceptual framework of the following study variables.

Figure 2.1

Proposed Model About Relationship between Negative Life Events, Positive and Negative Affect and Resilience



Objectives of the study

The objectives of the study are as follows:

- To investigate the relationship between negative life events (NLEs), positive and negative affect and resilience among older adults.
- To find out whether positive affect (PA) and/or negative affect (NA) have a mediating role between NLEs and resilience in older adults.
- To find out gender differences in NLEs, positive and negative affect and resilience among older adults.

Hypotheses of the study

- There is likely to be relationship between negative life events (NLEs) and resilience among older adults.
- There is likely to be relationship between NLEs and positive and negative affect among older adults.
- There is likely to be relationship between positive and negative affect and resilience among older adults.
- Positive affect (PA) is likely to mediate the relationship between NLEs and resilience among older adults.
- Negative affect (NA) is likely to mediate the relationship between NLEs and resilience among older adults.
- There will be significant gender differences in terms of NLEs, positive and negative affect and resilience among older adults.

Chapter 3

Method

In this chapter, we will first discuss the research design adopted. We will then delve into the specifics of data collection, including the sources of data, the sampling techniques employed, and the procedures used to ensure data quality and integrity, the detail of the data analysis methods employed to draw meaningful conclusions from the collected data. This will involve explaining the statistical techniques, software tools as well as the ethical considerations undertaken.

Research design

Cross-sectional research design (Zheng et al., 2020) was used to examine the relationship among NLEs, positive and negative affect and resilience in older adults.

Sampling technique

Convenience and purposive sampling techniques (Tang et al., 2012) were used in order to select the study sample.

Sample size

The present research comprised of a sample of N= 103 older adults aged of 60 and above (calculated through G-Power Analysis) was taken from Lahore City.

Inclusion criteria

- Older individuals aged 60 years and above were eligible to participate in the study.
- Both genders- male and female older adults were included in the research.

- Older adults who had a good English language comprehension were made a part of the research.
- Older adults residing in Pakistan for at least the past 20 years were included

Exclusion criteria

- Older adults who are in Pakistan only for visitation purposes, or those who have spent most of their life in a country other than Pakistan are excluded from the research.
- Older adults experiencing severe psychological illness such as schizophrenia, bipolar disorder, or severe depression were excluded from research.
- Older adults with cognitive impairments or any other neurological disorders affecting their ability to comprehend study instructions and procedures were excluded from the research.

Table 3.1*Sociodemographic Characteristics of Participants*

Sociodemographic characteristic	<i>n</i>	%
Gender		
Female	57	55.3
Male	46	44.7
Marital status		
Single	3	2.9
Married	69	67
Divorced	4	3.9
Widowed	27	26.2
Family system		
Living Alone	0	0
Nuclear	45	43.7
Joint	52	50.5
Old Age Home	6	5.8
Severe Physical Illness ^a	26	25.2
Severe Psychological Illness ^a	0	0

Note. *N* = 103. Participants were on average 67.73 years old (*SD* = 7.22). Average number of children was 3.37 (*SD* = 1.90). Average number of family members was 8.11 (*SD* = 5.75)

^a Reflects the number and percentage of participants answering “yes” to this question.

According to Table 3.1, around 44.7% were male and 55.3% were female. Most of the participants i.e., 67% were married. Majority of the participants belonged in the joint family system followed by 43.7% living in a nuclear family system. Only 25.2% reported to be suffering from any form of severe physical illness.

Conceptual and operational definitions

Negative life events

Negative life events can be defined as the changes that occur in a person's family life, occupational or study environments, which may, consequently result in either negative psychological or physiological outcomes or both (Zhang et al., 1987). It was operationally defined as participants' scored obtained on Geriatric Adverse Life Events Scale (GALES).

Positive and negative affect

It can be defined as subjective and individualistic experiences of mood where the negative affect can be the unpleasant or undesirable experiences of emotion like being sad or being afraid, while the positive affect denotes experiences that fall on the agreeable and desirable end of the affect gradient, like joy or interest (Watson & Clark, 1997). It was operationally defined as the participants' score on the Positive and Negative Affect Schedule (PANAS).

Resilience

Resilience can be explained as a characteristic in an individuals personality that diminishes the negative effects of stress by increasing the ability of a person to effectively respond to external and internal changes in surroundings and efficiently cope with life (Wagnild & Young, 1993). Resilience was operationally defined as the participants' score on the Brief Resilience Scale (BRS).

Measures

Demographic questionnaire

The demographic questionnaire was developed and administered in order to obtain basic demographic information about the participants. The questions were related to the age of the participants, their gender, marital status, number of family members they have, whether they live in a nuclear or joint family system or reside in old age home and about severe physical or psychological illness of sort.

Geriatric Adverse Life Events Scale (GALES; Devanand et al., 2002)

NLEs were measured by Geriatric Adverse Life Events Scale (Devanand et al., 2002). This measure was carefully chosen to be used in the current study as evaluating life events in older adults, it is the only recognized measure to assess 26 adverse life events items in a checklist format. For the purposes of the study, the participants had to state whether the events occurred or not, same as the original study (Devanand et al., 2002) but in the past 5 years (Hardy et al., 2002). Then, to every event marked yes, that had occurred, an interview was conducted for follow-up questions to assess perceived stress and also the impact on mood state. The perceived stress supplementary to each type of event was assessed by a 3-point scale that whether it was not at all stressful, somewhat stressful, or very stressful. Moreover, impact on mood was assessed by a 5-point Likert scale depicting whether they felt ranging from much better to much worse as a result of the specific event. This research study did not go with the traditional approach and the questionnaire form were used instead of interview questions (Graham, 2012).

The intra class-correlation coefficients of three subscales of number of life events, perceived stress, and impact on mood state ranged from 0.96 to 0.99 (Devanand et al., 2002). For this research study, the number of ‘yes’ responses on the events in the past 5 years were only used which were summed to create a total adversity score (Wilson, 2020).

Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1988)

Positive and Negative Affect Schedule uses adjective questions as scale measure. The total 20 items are further separated into two subscales designed to measure an individual’s positive and negative trait affects. Amongst the two subscales, the positive subscale (PA) includes 10 items like active, determined, excited, inspired, strong, etc. and negative subscale (NA) also includes 10 items: afraid, distressed, hostile, irritated, jittery, upset, etc. The PANAS uses a 5 point Likert scale that has values ranging from 1, very slightly or not at all to 5 being extremely. The cumulative score was calculated by combining the total sum of the positive items as well as negative items. For both sets the scores range from 10-50. The higher the positive score indicates positive affect and lower score on negative scale shows low negative affect, vice versa. The Cronbach alpha coefficient was 0.86 to 0.90 for the subscale positive affect and for the negative affect subscale it was 0.84 to 0.87. For PANAS, the test retest reliability was reported as .79 and .81 for PA and NA respectively (Watson et al., 1988).

Brief Resilience Scale (BRS; Smith et al., 2008)

BRS measures the construct of resilience which is a person’s perceived ability to bounce back from adverse situations or recover from stress. The measure

includes items that are worded both positively and negatively. The total number of items was 6 including statements, “I tend to bounce back quickly after hard times” or “I tend to take a long time to get over set-backs in my life”. The scale comprises of a 5-point Likert scale, 1 being ‘strongly disagree’ to 5 being ‘strongly agree’. Out of six, three items were reverse-coded before scoring. The complete score for this measure is determined by summing up the response scores ranging from 1-5 for all six items. It gives a range of 6-30 which is then divided by the number of questions answered. High scores determine high resilience (Smith et al., 2008). The reliability coefficient for BRS was reported as .71 (Fung, 2020).

Procedure

In order to carry out this research, primarily the institutional approval was sought. The permissions for using questionnaire were taken from respective authors of the scales. The respective scales, demographic questionnaire and the informed consent were in English language for older adults’ population who had sound English comprehension to fill the self-report questionnaires on their own accord. Sample size of 103 participants, as determined on the basis of g-power analysis was collected who met the inclusion criteria. They were fully informed regarding the purpose and aim of the research study as well as the time it would take for them to complete the questionnaires. Their written consent was taken after informing them about maintaining their anonymity, their right to withdraw and confidentiality clause.

The participants filled the demographic questionnaire to collect basic information. No sensitive or personal information was collected in order to protect the participants' confidentiality and identity. After that, the respective scales for the study variables were administered.

After the collection of data, data analysis was run using the appropriate statistical analysis techniques including correlational analysis, Mann-Whitney *u*-test and parallel mediation analysis to find out the link between the IV, mediator and DV. After analyzing the data and reporting the results, they were compiled. Finally, the results of the research were critically analyzed with findings of the previous literature. Several implications were stated as an outcome of the findings of present study for this specific population.

Ethical considerations

The following were be kept in mind:

- Permissions from the authors of the scales was sought
- Confidentiality of information was ensured to the participants.
- It was guaranteed that the data collected would only be used for research purposes
- The participants were duly given an information sheet that contained all the specifics of the research study regarding its nature, purpose, duration and procedure.
- Researcher information and contact details were provided as well
- The written consent form was signed after the participants' thorough understanding

- Data was only accessible to the research team of the study

Statistical Analysis

To analyse the results for this study Statistical Package for the Social Sciences (SPSS) version 21 was used. The demographic information was obtained by the demographic questionnaire from the participants and the internal consistency of the scales was analyzed by the use of descriptive statistics. Through the inferential statistics, the assumptions were tested and Spearman Rho Correlation was run evaluate the relationship among NLEs, positive and negative affect and resilience. Parallel Mediation analysis using PROSESS 4.2 (Hayes, 2022) Model 4 was also done to view the mediation effect of PA and NA between NLEs and resilience. Nonparametric test, Mann-Whitney *U*-test was used to identify the gender differences between the study variables.

Chapter 4

Results

This chapter interprets the results of the main study, which explored the relationship between NLEs, PA, NA and resilience in older adults. To assess participants' responses, three scales were used, and different statistical methods were applied to examine the relationships among variables.

Prior to conducting inferential statistics, several assumptions were checked, including normal distribution, independence of observations, outliers, and homogeneity of variance. However, normality assumptions were not met, and extreme data outliers which could not be avoided, were detected for one variable, Negative Life Events, which measure the occurrence of rare events.

Despite the presence of extreme outliers, correlations were calculated between NLEs and the other two variables, positive and negative affect, and resilience, which did not have significant outliers. To address the potential impact of outliers, alternative measures such as priori sum scores were used for Negative Life Events (Devanand et al., 2002), which reduces the impact of extreme values to provide a more robust analysis, and means were computed for positive and negative affect and resilience. It is imperative to note that the presence of extreme outliers may have influenced the results and had to be interpreted with caution.

Internal Consistency of Scales

Cronbach alpha of the three scales were checked to see the internal consistency of the scales. Table 4.1 depicts the high internal consistency of scales positive affect, negative affect and resilience.

Table 4.1

Psychometric Properties of Study Variables

Scales	<i>M</i>	<i>SD</i>	Range	<i>Cronbach's</i> <i>a</i>
Number of Negative Events	6.80	3.89	0-26	.74
Positive Affect	30.53	7.19	10-50	.80
Negative Affect	23.49	8.18	10-50	.86
Resilience	18.37	5.08	6-30	.82

The table above depicts moderate internal consistency between items of a scale used in the study. Reliability coefficients $\geq .70$ were considered adequate reliability (Groth-Marnat, 2009).

Correlational Analysis

Table 4.2

Descriptive Statistics and Correlations for Study Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4
1. NLEs	103	6.80	3.89	—			
2. PA	103	3.05	.72	-.15	—		
3. NA	103	2.35	.82	.05	-.03	—	
4. Resilience	103	3.06	.85	-.26**	.38***	-.43***	—

Note: NLE= Negative Life Events, PA= Positive Affect, NA= Negative Affect.

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

Since, the normality assumptions were not fulfilled to conduct the parametric measure of correlational analysis, nonparametric test, Spearman Rho correlation was used to study the relationship between negative life events, positive and negative affect and reliance among older adults. The table 4.2 shows the correlation among the variables tested in the study. The results identify that resilience is significantly, negatively and weakly related to negative life events. This implies that older adults who have encountered more negative events are less likely to be resilient. Moreover, resilience has a significant, positive and moderate relationship with positive affect stating that older adults with high resilience have high scores on positive affect. Resilience also has a significant, negative and moderate relationship with negative affect which depicts that higher negative affectivity is likely to result in older adults being less resilient.

Positive affect and negative affect had no significant relationship nor were they significantly related to the variable negative life events.

Mediation Analysis

The parallel mediation model analysis was conducted despite the insignificant relationship between the NLEs (IV) and the PA and NA (Mediators) in order to check for estimate indirect effects in the absence of a significant IV-mediator relationship by bootstrapping methods (Hayes, 2013). The parallel mediation may be appropriate to examine PA and NA as separate mediators between NLEs and resilience.

Prior to conducting the mediation analysis, regression assumptions were checked to determine causal relationships. The data did not consist of influential cases and all the regression assumptions were duly fulfilled to proceed with regression. As the value of Durbin Watson fell within the acceptable range of 1 and 3, the assumption of independent errors was confirmed. No perfect multicollinearity was assessed by the tolerance values which were above .2, thus meeting the assumption. Lastly, the assumptions of normal distribution, linearity and homoscedasticity were also satisfied. However, the normality assumption for NA as the dependent variable was slightly skewed.

Table 4.3

Indirect Effect of Negative Life Events on Resilience through Positive and Negative Affect

Criterion Variable	Predictor Variable	<u>95% CI</u>			
		β	p	<i>LL</i>	<i>UL</i>
Direct Effects					
Resilience	NLE	-.04*	.03	-.08	-.01
PA	NLE	-.04*	.05	-.07	-.00
Resilience	PA	.38***	<.001	.19	.57
Indirect Effect					
Resilience	NLE through PA	-.01	---	-.03	.00
Direct Effects					
Resilience	NLE	-.04*	.03	-.08	-.01
NA	NLE	.004	.84	-.04	.05
Resilience	NA	-.44***	<.001	-.60	-.27
Indirect Effect					
Resilience	NLE through NA	-.00	---	-.02	.02

Note: NLE= Negative Life Events, PA= Positive Affect, NA= Negative Affect, *LL*= Lower Limit, *UL*= Upper Limit, *CI*= Confidence Interval, Coding for NLE (No=0, Yes=1), * $p < .05$, ** $p < .01$, *** $p < .001$

Parallel mediation analysis using SPSS PROCESS Macro 4.2 (Hayes, 2022) Model 4 was run to investigate the mediation effects of positive affect and negative affect between negative life events and resilience. A bias-corrected nonparametric bootstrapping technique with 5,000 resamples was employed to estimate the direct, indirect, and total effects of NLEs on resilience in the study sample.

The table shows that the direct effect of negative life events (independent variable) on resilience (dependent variable) is significant and negative. This means that older adults experiencing more negative events are likely to show less resilience. The results identified that negative life events (independent variable) had a direct effect on positive affect (M1) which is also significant and negative. This means that older adults who encounter higher number of negative events are likely to have less positive affectivity in their lives. The direct effect of positive affect (M1) on resilience (dependent variable) is significant and positive. This means that older adults who have more positive affectivity in their lives are likely to be more resilient. The table shows that the indirect effect of negative life events on resilience through positive affect is not significant.

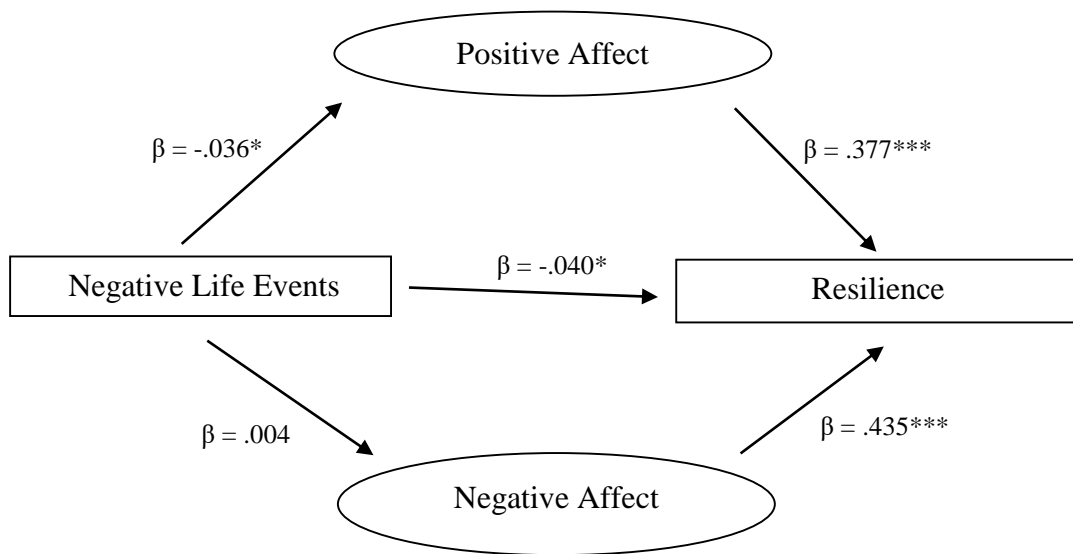
Moreover, the table shows that in the mediation model of negative life events and resilience through negative affect, significant, negative, direct effect of negative life events (independent variable) on resilience (dependent variable) is identified. This means that older adults experiencing more negative events are likely to show less resilience. The direct effect of number of negative events (independent variable) on negative affect (M2) is not significant. The direct effect of negative affect (M2) on resilience (dependent variable) is significant and negative. This means that older adults who have more negative affectivity in their lives are the ones who are less resilient. The table shows that the indirect effect of negative life events on resilience through negative affect is not significant.

Since, the indirect effects of parallel mediation are insignificant but the direct effect is significant, it suggests that there is no mediation effect. Positive

and negative affect, therefore did not significantly explain the relationship of NLE and resilience.

Figure 4.1

Emergent Mediation Model About Relationship between Negative Life Events, Positive and Negative Affect and Resilience in Older adults



Indirect effect of positive affect on resilience ($\beta = -.014$) is non-significant: 95%
CI = (-.03, .00)

Indirect effect of negative affect on resilience ($\beta = -.002$) is non-significant: 95%
CI = (-.02, .02)

Gender differences

Since the normality assumptions were not met for the sample distribution of NLE and NA i.e., the skewness and kurtosis values were not in the acceptable range of ± 1.96 , Mann Whitney U-test was run to find statistical differences in NLEs, PA and NA and resilience among males and females.

Table 4.4

Nonparametric Mann Whitney U-test

Variable	Males	Females	Mann-Whitney <i>U</i>	<i>z</i>	<i>p</i>
	(<i>n</i> = 46)	(<i>n</i> = 57)			
	Mean Ranks	Mean Ranks			
Negative Life Events	50.49	53.22	1241.5	-.463	.643
Positive affect	53.82	50.54	1227.5	-.555	.579
Negative affect	44.83	57.79	981.0	-2.191*	.028
Resilience	60.17	45.40	935.0	-2.499*	.012

* $p < .05$

Table 3.4 indicates that there is a statistically significant difference between males and females in negative affect. The results revealed a greater level of negative affectivity in females as compared to males ($U = 981.0$, $p = .028$, two tailed). Moreover, the results revealed a statistically significant difference in resilience between males and females. The results revealed a greater level of resilience in males as compared to females ($U = 935.0$, $p = .012$, two tailed).

Table 4.5*Negative life events during the previous 5 years*

Negative Life Events	Males (<i>n</i> = 46)		Females (<i>n</i> = 57)	
	<i>n</i>	%	<i>n</i>	%
Major financial difficulties	17	37	18	31.6
Retirement	20	43.5	7	12.3
Sudden Loss of Employment	10	21.7	6	10.5
New Major Physical Illness	11	23.9	30	52.6
Long-Standing Major Physical Illness	18	39.1	23	40.4
Difficulty in Getting Adequate Professional Services	8	17.4	9	15.8
Major Physical Illness of a Close Family Member	23	50	32	56.1
Accident or Injury	7	15.2	11	19.3
Victim of Crime	6	13	8	14
Death of Spouse	4	8.7	6	10.5
Death of a Child	5	10.9	6	10.5
Death of a Parent	22	47.8	21	36.8
Death of a Brother or Sister	21	45.7	18	31.6
Death of Other Relative or Close Friend	34	73.9	42	73.7
Death of a Pet	7	15.2	9	15.8
Forced to Leave or Lose Home	4	8.7	6	10.5
Voluntarily Changed Place of Residence	17	37	22	38.6
Marital Separation or Divorce	1	2.2	3	5.3
Other Marital Difficulties	10	21.7	13	22.8

Major Family Problems/Conflicts other than with Spouse	15	32.6	22	38.6
Major Problems with Friends or Neighbors	11	23.9	8	14
Breakup-of a Long-Term Relationship other than Marriage	3	6.5	9	15.8
Separation from any other Close Friend or Relative	6	13	16	28.1
An Individual Moved out of your Household	7	15.2	14	24.6
An Individual Moved into your Household	9	19.6	14	24.6
Became a Caretaker for Relative or Friend	13	28.3	18	31.6

Note. $N = 103$. Females on average experienced 6.9 events ($SD = 3.63$). Males on average experienced 6.7 NLEs ($SD = 4.24$).

The NLEs were assessed on the basis of their occurrence in the last 5 years (Hardy et al., 2002). Out of the 103 participants who responded, 1.0% of the respondents did not state the occurrence of any of the 26 types of adverse events during the preceding 5 years, 33% of them reported to have experienced 1-4 types of events, 42.7% reported 5-9 types of events and about 20.4% stated that they experienced more than 10 types of events in the past 5 years. Most frequently reported event was the death of non-first degree relative or close friend ($N= 76$), which was followed by illness of a close family member ($N= 55$). Marital separation/divorce was the least reported event by 3.9% respondents. Events like

retirement or loss of employment were frequently reported by males while occurrence of a new major physical illness was reported more frequently by females.

Chapter 5

Discussion

Negative life events are a common occurrence in almost every individual's life in almost every developmental age including traumatic experiences, undesirable instances or personally disturbing events (Sheerin et al., 2018). Since old age is the last developmental age in an individual's life, the older individuals are more likely to have experienced the deaths of family, friends, losses of work responsibilities or roles, changes in relationships, declining health and changes in economic positions (Azeem & Naz, 2015). These emotional and behavioural difficulties can result in mental health disturbance of the elderly population and they may in turn try to cope with it and get ahead in spite of the distress (Dasti et al., 2019). Therefore, the current study aimed to explore the relationship between NLE and resilience with the mediating effect of PA and NA between them. This chapter discusses the main outcomes of this research with reference to the hypotheses formulated in light of the existing literature.

The sample of $N=103$ older adults, age ($M= 67.74$) was taken from Lahore, Pakistan. The sample characteristics suggest that there were 46 males and 57 females. Most of the participants were reported to be married (67%) and lived in a joint family system (50.5%). Since in Pakistan, there are different types of family systems that the older adults may be living in. the individuals residing in old age homes may have different experiences with caregiving than individuals with their families while individuals in joint family systems may have different experiences with individuals living in a joint family system. Therefore, the study

aimed to capture the diversity of experiences in older adults in Pakistan to comprehensively understand the relationship among the study variables.

Results revealed that 1.0% of the respondents did not state the occurrence of any of the 26 types of adverse events during the preceding 5 years, 33% experienced 1-4 types of events, 42.7% experienced 5-9 types of events and about 20.4% experienced more than 10 types of events in the past 5 years. NLEs like loss of employment and retirement were seen more commonly reported by males because they have the most impact on them whether psychological or physiological (Iftikhar et al., 2014). However, the score of physical illness in females was relatively more which is consistent with the previous literature that women suffer from more chronic illnesses (Carmel, 2019). This study undertook the negative life events of the older individuals for the past five years of their lives because this time frame was long enough to understand the range of significant life events that could have occurred, but it is not long enough to create a recall bias in the participants to selectively remember events (Hardy et al., 2002). Focusing more on the last five years can help the literature to understand the number of events that an older individual on average experiences and calculate its total level of adversity. Unlike recent NLEs, the older life vents would have less impact on the individuals as it would be long enough for the individuals to have dealt with them by developing appropriate coping strategies.

The current study hypothesized the significant correlation between NLE and resilience. The current hypothesis was accepted as the results showed a significant relationship of NLE and resilience such that the higher the number of

negative experiences faced, the lesser the resilience in older adults. This phenomenon is referred to as cumulative adversity (Wilson, 2020). This finding is partially consistent with the hypothesis and the previous literature (Connor & Davidson, 2003). Resilience might be lower in people with more exposure to NLEs especially in old age due to the chronic exposure to adversity that can deplete an individual's mental and emotional resources to enable them to deal with upcoming challenges (McGinnis, 2018). However, this relationship is complex and there might be multiple contextual factors at play as well.

On the contrary, relationship of NLE with that of the affects was not established in the current study and this outcome is inconsistent with the study hypothesis and the previous literature (Schricker et al., 2023; Yang et al., 2020). One possible justification of this could be that in this unique population of Pakistani older adults, NLE may not always be related to the negative affect because this population might be making use of cognitive strategies like positive reappraisal to find a meaningful opportunity in those negative events and in order to reduce the intensity of the negative emotions, they use some emotional regulation strategies. Likewise, when NLE are not related to positive affect is likely to indicate that individuals differ in levels of resilience and optimism related to the negative events in their lives (Infurna & Luthar, 2016).

Moreover, the study hypothesis stated that there is a likely relationship between the PA and NA and resilience. The hypothesis was accepted in light of the current literature (Goradel et al., 2016). Montero-Marín et al. (2015) further state that individuals who experience positive affectivity have the tendency to

engage in more and better coping behaviors that can in turn assist them to face challenges in their lives and overcome the hardships that they encounter. While, on the contrary when having higher negative affectivity, this relationship is inversely related because it can result in less resilience due to the use of maladaptive coping strategies. It can worsen the adversity and ability to bounce back from difficult situations.

Further, the hypotheses derived on the foundation of previous literature and the theoretical model of the study explored the mediating role of the affects- PA and NA- in the association between NLE and resilience. However, the results of the present study did not support the hypotheses of the mediating effect of PA and NA in Pakistani older population. This outcome is partially in line with the previous literature which states that affect can be related to NLE and resilience. Infurna and Jayawickreme (2019) indicate that NLEs can be related to higher scores on NA and lower on PA but they are unlikely to completely mediate the relationship between adversity and resilience. They may not fully capture the complexity of the relationship between the constructs and there may be other several pathways to explain this relationship. Another possible explanation for the mediation analysis to be non-significant is that the sample of older adults was taken and being at the last developmental stage and living a complete life in the past, they may have developed better coping strategies like emotional regulation to deal with the NLEs over time. The effect that positive affect as well as the negative affect that has on resilience is likely to be not as strong as that in the younger populations studied in the previous literature because the latter population

is still in the process of developing the mitigating strategies (Yeung & Fung, 2007). Furthermore, the cultural differences could have influenced the findings of this study. The Pakistani society is a collectivist culture and in the current study, the majority of the sample belonged to the joint family system which can comparatively have a loving atmosphere and friendly relationships highlighting the role of social support in this multifaceted area of resilience (Ahmed, 2011). The results are an addition in the indigenous literature stating that NLEs is a broad term while resilience is a multifaceted construct and their relationship can be further explored by identifying other potential mediating and moderating effects of individual, social and environmental factors.

The hypothesis also stated that there would be significant gender differences in males and females among the study variables. This finding is consistent with the previous literature (Hamama & Hamama-Raz, 2019). The higher level of negative affect in the Pakistani older females can be related to the differences in the social and cultural roles of males and females in Pakistan. The roles assigned to females may have made them more vulnerable to adversity as social and cultural factors might be placing greater stress on the women (Ahmed and Khan, 2015). On the other hand, the study found significant differences in the resilience of the older population where the males scored higher on this dimension than their female counterparts. Yıldırım and Çelik Tanrıverdi (2020) note that social support is a strong predictor of resilience and due to cultural values in Pakistan, the outgoing male population is likely to intermingle with their

surroundings which can eventually lead them to remain steadfast in bouncing back from adverse situations.

Conclusion

This research study investigated the relationship between negative life events (NLEs), positive affect (PA) and negative affect (NA) and resilience in older adults while also inspecting the mediating role of the PA and NA between the independent and dependent variables. The results found no mediation of the PA and NA on the relationship of NLE and resilience. This suggest that there are other factors that tend to play a more significant role in enhancing resilience in the face of adversity of negative life events. The results also discussed the findings in relation to the previous literature suggesting sufficient ground for filling in the literature and leading to future implications. Future studies should explore the other potential factors like social support and coping strategies so that better comprehension can be gained on the role of resilience in the sample of Pakistani older adults.

Strengths of the Study

- There have been very limited researches conducted in Pakistan on the study variables. It is a relatively new addition to the indigenous literature.
- The study has provided a unique sense as it aims to test the hypothesis only in older adults. It will enhance the external validity of the findings for older adults.
- The use of reliable and valid measures for the study variables enhances the reliability of the results.

- Ethical guidelines for conducting the research were rigorously followed including maintaining confidentiality, obtaining informed consent, etc.

Limitations and Suggestions

- The study sample size of Pakistani older adults was small which limits the generalization of the study findings.
- The relatively longer length of questionnaires and in English language created a sense of insecurity and hesitance for the sample. It is suggested that for future studies, the questionnaires should be of a reasonable length and in Urdu language i.e. the native language of the study population so that they feel comfortable in responding.
- This research study used a cross sectional research design creating a limitation to establish causality. Further researches should apply longitudinal designs to investigate the relationship between the study variables.
- The only mediating effect that was tested in this study was of PA and NA between NLEs and resilience while not taking into account other potential mediators such as social support or spirituality. Future studies could explore the mediating effect of these variables.

Future implications of the Research

The study emphasizes the link of NLEs and resilience which shed light on the importance of developing interventions that can help older adults to cope and adapt to the stressors of adverse events in their lives, including the use of therapies like CBT, mindfulness-based stress reduction and social support programs especially designed for the older population in Pakistan. Provided the societal emphasis on respect of older individuals in Pakistani culture, it is important to pay greater attention to the wellbeing and mental health of this population given the high frequency of NLE reported by the older adults in this research study. The additional consideration would be to check for other potential mediator or moderator variables to effectively explore other factors that could be influencing resilience in older adults such as social support or spirituality.

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APPENDICES

APPENDIX A:
QUESTIONNAIRE PERMISSION LETTERS

SPECIAL TERMS No83142

These User License Agreement Special Terms (Special Terms) are issued between Mapi Research Trust (“MRT”) and Kanza Ch (User).

These Special Terms are in addition to any and all previous Special Terms under the User License Agreement General Terms.

These Special Terms include the terms and conditions of the User License Agreement General Terms, which are hereby incorporated by this reference as though the same was set forth in its entirety and shall be effective as of the Special Terms Effective Date set forth herein.

All capitalized terms which are not defined herein shall have the same meanings as set forth in the User License Agreement General Terms.

These Special Terms, including all attachments and the User License Agreement General Terms contain the entire understanding of the Parties with respect to the subject matter herein and supersedes all previous agreements and undertakings with respect thereto. If the terms and conditions of these Special Terms or any attachment conflict with the terms and conditions of the User License Agreement General Terms, the terms and conditions of the User License Agreement General Terms will control, unless these Special Terms specifically acknowledge the conflict and expressly states that the conflicting term or provision found in these Special Terms control for these Special Terms only. These Special Terms may be modified only by written agreement signed by the Parties.

1. User information

User name	Kanza Ch
Category of User	Student
User address	93 Jail Road, Lahore, Lahore, 54000, Punjab, Pakistan
User VAT number	
User email	kanzach2000@gmail.com
User phone	+923224471541
Billing information	93 Jail Road, Lahore, Lahore, 54000, Punjab, Pakistan

2. General information

Effective Date	Date of acceptance of these Special Terms by the User : 12 Apr 2023
----------------	--

Expiration Date (Term)	Upon completion of the Stated Purpose
Name of User's contact in charge of the request	Kanza Ch

3. Identification of the COA

Name of the COA	GALES - The Geriatric Adverse Life Events Scale
Author	Devanand DP, Kim MK, Paykina N, Sackeim HA
Copyright Holder	Columbia University
Copyright notice	GALES © Columbia University 2002
Bibliographic reference	Devanand DP, Kim MK, Paykina N, Sackeim HA. Adverse life events in elderly patients with major depression or dysthymic disorder and in healthy control subjects. Am J Geriatr Psychiatry. 2002 May-Jun;10(3):265-74 (Pubmed abstract)
Module(s)/version(s) needed	<ul style="list-style-type: none"> GALES

4. Context of use of the COA

The User undertakes to use the COA solely in the context of the Stated Purpose as defined hereafter.

4.1 Stated Purpose Other project

Negative life events, positive and negative affect and resilience in

Title older adults

Disease or condition

Start: 08/2022

Planned Term*

End: 08/2023

Description (including format or media) The questionnaire will be administered in paper format

4.2 Country and languages

MRT grants the License to use the COA on the following countries and in the languages indicated in the table below:

Version/Module	Language	For use in the following country
GALES	English	the USA

The User understands that the countries indicated above are provided for information purposes. The User may use the COA in other countries than the ones indicated above.

5. Specific requirements for the COA

- The Copyright Holder of the COA has selected ICON LS as the recommended vendor to perform linguistic validation/translation work on the COA. In case the new translation is not produced by ICON LS, the User shall comply with the methodology and requirements set-out in section 4.2.2 of this WO
- In case the User wants to use an e-Version of the COA, the User shall send the Screenshots of the original version of the COA to the Copyright Holder through MRT for approval. The Copyright Holder may request consulting fees for this review

By accepting these Special Terms, the User acknowledges and confirms that it has read and approves the User Agreement General Terms.



Requesting to use Positive and Negative Affect Schedule (PANAS) 4 messages

Kanza Chaudhary <kanzach2000@gmail.com>
To: db.watson@nd.edu
Cc: zara.haroon@kinnaird.edu.pk

Thu, 1 Sept 2022 at 2:39 pm

Respected David Watson,

I hope this email finds you in good health. My name is Kanza Chaudhary, and I am an undergraduate student at the Department of Applied Psychology, Kinnaird College For Women University, Pakistan. I am completing my thesis in Applied Psychology. I am aiming to research on Negative Life Events, Positive and Negative Affect and Non-Suicidal Self Injury in Older Adults.

I am asking for a request for permission to use the "Positive and Negative Affect Schedule" (PANAS) in my BS research study. The scale will be translated to my native language i.e Urdu, for the use and administration in my research under the supervision of Ms Zara Haroon.

Could you please also provide a copy of (1) the test questionnaire, (2) the Psychometric properties (3) the standard instructions for administering the test, (4) scoring procedures. This will aid me to assure the correct administration of the test. In case you have the Urdu translated version of PANAS, it would be appreciated if you could provide that as well.

I shall be highly grateful if you allow me to use the Scale.
Full reference and scale details will be cited in my thesis.

If you do not control the copyright for these materials, it is requested to provide the

information about the authority I should contact. If these terms and conditions are acceptable, please indicate so by replying the undersigned via e-mail at kanzach2000@gmail.com

Thanking you in anticipation.

Sincerely,
Kanza Chaudhary
BS in Applied Psychology
Department of Applied Psychology,
Kinnaird College for Women University,
Lahore, Pakistan

David Watson <db.watson@nd.edu>

Thu, 1 Sept 2022 at 6:09 pm

To: Kanza Chaudhary <kanzach2000@gmail.com>

Cc: zara.haroon@kinnaird.edu.pk, Lee Anna Clark <la.clark@nd.edu>, Adam Sikich <asikich@dunnerlaw.com>, Julia Schroeder <julia@dunnerlaw.com>

Dear Kanza,

I appreciate your interest in the Positive and Negative Affect Schedule (PANAS), and I am pleased to grant you permission to use the PANAS in your study. Please note that to use the PANAS, you need both our permission and the permission of the American Psychological Association (APA), which is the official copyright holder of the instrument. Because I am copying this email to APA, however, you do not have to request permission separately from APA; this single email constitutes official approval from both parties.

We make the PANAS available without charge for non-commercial research purposes. We do require that all printed versions of the PANAS (including online protocols and mobile apps) include a full citation and copyright information. Thus, any printed copies should state:

"From "Development and validation of brief measures of positive and negative affect: The PANAS scales," by D. Watson, L. A. Clark, and A. Tellegen, 1988, *Journal of Personality and Social Psychology*, 54, 1063-1070. Copyright (C) 1988 by the American Psychological Association. Reproduced with permission."

In addition, please note that we do not authorize translations of the PANAS. You are free to translate the instrument as needed. However, any translation should be referred to as being "based on the PANAS," rather than calling it "The Urdu PANAS" or another name that might imply that it is an officially authorized version. I have attached an Urdu translation of the PANAS that was sent to me several years ago. You are welcome to use it, although I cannot evaluate its quality or its validity.

As requested, I have attached a sample copy of the PANAS, along with scoring information.

Thanks again for your interest in the PANAS. Good luck with your research.

Regards,

David Watson

David Watson, Ph.D.
 Andrew J. McKenna Family Professor of Psychology
 Co-Director, Center for Advanced Measurement of Personality & Psychopathology
 University of Notre Dame
 (574) 631-1403 (office)

[Quoted text hidden]

Kanza Chaudhary <kanzach2000@gmail.com>
 To: David Watson <db.watson@nd.edu>

Thu, 13 Apr 2023 at 3:29 am

Hello Dr Watson,

I hope this email finds you in good health.

The previous thread of emails reveals my interest in your scale. This email is to inform you regarding a slight change in the focus of my research.

The topic of my research is updated to 'Negative Life Events, Positive and Negative Affect and Resilience in Older Adults.'

This email is essential for your permission to use PANAS for the updated research topic. Full reference and scale details will be cited in my thesis.

Thanking you in anticipation.

Sincerely,
 Kanza Chaudhary
 BS in Applied Psychology
 Department of Applied Psychology,
 Kinnaird College for Women University,
 Lahore, Pakistan

[Quoted text hidden]

David Watson <db.watson@nd.edu>
 To: Kanza Chaudhary <kanzach2000@gmail.com>

Thu, 13 Apr 2023 at 3:37 am

Hi Kanza,

You have our permission to use the PANAS in your study, subject to the same conditions as

before. David Watson

David Watson, Ph.D.
 Andrew J. McKenna Family Professor of Psychology
 Co-Director, Center for Advanced Measurement of Personality & Psychopathology
 University of Notre Dame
 (574) 631-1403 (office)

[Quoted text hidden]

APPENDIX B:
INFORMED CONSENT

Information Sheet

I am Kanza Chaudhary, student of BSc (Hons) in Psychology at the Department of Applied Psychology, Kinnaird College for Women, Lahore conducting a research study. You have been requested to take part in my research, supervised by Ms Zara Haroon. Before taking part, it is necessary for you to know why this research study is being conducted and how is it going to be beneficial. Please read the following information carefully.

Purpose of the Research

The purpose of this research is to identify negative life events, positive and negative affect and resilience in older adults.

What are you required to do?

If you are of **60+ years** and intend to participate in this research, you will be asked to sign a consent form. After consent, you will be asked to fill the questionnaire related to the research purpose. Your participation will take approximately 10 minutes.

What will be done of your responses?

Your responses would be recorded in the form of codes. All the information would be kept confidential and will only be used for academic and research purposes.

Your Rights

Your participation in this research is voluntary and you are free to withdraw at any time. If you are willing and you want to ask anything about the study, feel free to ask.

Complaints

In case of any complaints or queries, you may contact: kanzach2000@gmail.com

Phone: +923224471541

Thank you for your cooperation

Consent Form

Research Title: *Negative Life Events, Positive and Negative Affect and Resilience in Older Adults*

Researcher: Kanza Chaudhary

Supervisors: Ms Zara Haroon

Kindly read the following statements:

1. I accept the fact that I have thoroughly read and understood the provided information sheet.
2. I accept that I was given the opportunity to know about the research and obtain answers about the queries.
3. The researcher(s) has told me about the aim, duration, and nature of research
4. I am willingly participating in the research.
5. I know that I have the right to quit the research at any point.
6. I am ready to take part in the research.

Initials of the Participant _____ Date _____ Signature _____

Name of the Researcher _____ Date _____ Signature _____

APPENDIX C:
DEMOGRAPHIC FORM

Demographic Form

1. Gender: Male Female
2. Age (in years): _____
3. Nationality: _____
4. City of residence: _____
5. Marital status: Married Single Divorce/Separation Widow/Widower
6. Number of children _____
7. Number of family members _____
8. Family system: Nuclear Joint Old age home
9. Diagnosed with severe physical illness No Yes
10. Diagnosed with severe mental illness No Yes

APPENDIX D:
SAMPLE QUESTIONNAIRES

GERIATRIC ADVERSE LIFE EVENTS SCALE

The Geriatric Adverse Life Events Scale (GALES) consists of 26 acute, adverse life events. For each event, it is asked to check “yes” or “no” if an event occurred in the last 5 years. For each item checked “yes”, follow up questions need to be answered. Leave the follow up questions blank in case “no” is checked.

EVENT	YES	NO
1) Major Financial Difficulties a) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful b) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N
2) Retirement a) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful b) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N
3) Sudden Loss of Employment a) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful b) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N
4) New Major Physical Illness (Arising within the last year only) a) Has this event occurred more than once? (Yes/No) Number of times event occurred____ b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N
5) Other Long-Standing Major Physical Illness a) Has this event occurred more than once? (Yes/No) Number of times event occurred____ b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N
6) Difficulty in Getting Adequate Professional Services (e.g. legal, medical) a) Has this event occurred more than once? (Yes/No) Number of times event occurred____ b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse	Y	N

7) Major Physical Illness of a Close Family Member	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
8) Accident or Injury	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
9) Victim of Crime (e.g. assaulted, apartment/house robbed)	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
10) Death of Spouse	Y	N
a) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
b) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
11) Death of a Child	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
12) Death of a Parent	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
13) Death of a Brother or Sister	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		

14) Death of Other Relative or Close Friend	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
15) Death of a Pet	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
16) Forced to Leave or Lose Home (e.g. eviction)	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
17) Voluntarily Changed Place of Residence	Y	N
a) Has this event occurred more than once? (Yes/No)		
Number of times event occurred_____		
b) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
c) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
18) Marital Separation or Divorce	Y	N
a) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
b) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
19) Other Marital Difficulties	Y	N
a) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
b) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		
20) Major Family Problems/Conflicts other than with Spouse	Y	N
a) How stressful did you find (the event)?		
i) Not at all stressful ii) Somewhat stressful iii) Very stressful		
b) Did it make you feel:		
i) Much better ii) Better iii) No effect iv) Worse v) Much worse		

<p>21) Major Problems with Friends or Neighbors</p> <p>a) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>b) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N
<p>22) Breakup-of a Long-Term Relationship other than Marriage</p> <p>a) Has this event occurred more than once? (Yes/No) Number of times event occurred_____</p> <p>b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N
<p>23) Separation from any other Close Friend or Relative</p> <p>a) Has this event occurred more than once? (Yes/No) Number of times event occurred_____</p> <p>b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N
<p>24) An Individual Moved out of your Household (not including break-up of marriage/relationship)</p> <p>a) Has this event occurred more than once? (Yes/No) Number of times event occurred_____</p> <p>b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N
<p>25) An Individual Moved into your Household</p> <p>a) Has this event occurred more than once? (Yes/No) Number of times event occurred_____</p> <p>b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N
<p>26) Became a Caretaker for Relative or Friend</p> <p>a) Has this event occurred more than once? (Yes/No) Number of times event occurred_____</p> <p>b) How stressful did you find (the event)? i) Not at all stressful ii) Somewhat stressful iii) Very stressful</p> <p>c) Did it make you feel: i) Much better ii) Better iii) No effect iv) Worse v) Much worse</p>	Y	N

Of all the items for which you checked YES, which **one** affected you the strongest?

Item #:_____

The PANAS

This scale consists of a number of words that describe different feelings and emotions. Indicate to what extent you **generally** feel this way, that is, how you feel on the average.

Feelings	Very slightly/ not at all	A little	Moderately	Quite a bit	Extremely
Interested					
Distressed					
Excited					
Upset					
Strong					
Guilty					
Scared					
Hostile					
Enthusiastic					
Proud					
Irritable					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Jittery					
Active					
Afraid					

Brief Resilience Scale (BRS)

No.	Items	Strongly Disagree 0	Disagree 1	Neutral 2	Agree 3	Strongly Agree 4
1	I tend to bounce back quickly after hard times					
2	I have a hard time making it through stressful events					
3	It does not take me long to recover from a stressful event					
4	It is hard for me to snap back when something bad happens					
5	I usually come through difficult times with little trouble					
6	I tend to take a long time to get over set-backs in my life.					

**APPENDIX E:
SPSS OUTPUT**

Reliability

Scale: gales

Case Processing Summary

		N	%
Valid		103	100.0
Cases Excluded ^a		0	.0
Total		103	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.735	.740	26

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
6.7961	15.144	3.89157	26

Reliability

Scale: PA

Case Processing Summary

		N	%
Valid		103	100.0
Cases Excluded ^a		0	.0
Total		103	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.795	.798	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.5340	51.663	7.18770	10

Reliability**Scale: NA****Case Processing Summary**

		N	%
Cases	Valid	103	100.0
	Excluded ^a	0	.0
	Total	103	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.858	10

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.4854	66.899	8.17920	10

Reliability**Scale: brs****Case Processing Summary**

		N	%
Cases	Valid	103	100.0
	Excluded ^a	0	.0
	Total	103	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.821	.821	6

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
18.3689	25.765	5.07588	6

Nonparametric Correlations**Descriptive Statistics**

	Mean	Std. Deviation	N
S_Gales	6.7961	3.89157	103
Mean_PA	3.0534	.71877	103
Mean_NA	2.3485	.81792	103
Mean_BRS	3.0615	.84598	103

Correlations

			S_Gales	Mean_PA	Mean_NA	Mean_BRS
Spearman's rho	S_Gales	Correlation Coefficient	1.000	-.147	.050	-.264**
		Sig. (2-tailed)	.	.138	.615	.007
		N	103	103	103	103
	Mean_PA	Correlation Coefficient	-.147	1.000	-.029	.378**
		Sig. (2-tailed)	.138	.	.768	.000
		N	103	103	103	103
	Mean_NA	Correlation Coefficient	.050	-.029	1.000	-.432**
		Sig. (2-tailed)	.615	.768	.	.000
		N	103	103	103	103
	Mean_BRS	Correlation Coefficient	-.264**	.378**	-.432**	1.000
		Sig. (2-tailed)	.007	.000	.000	.
		N	103	103	103	103

** . Correlation is significant at the 0.01 level (2-tailed).

Mann-Whitney Test

Ranks				
	Gender	N	Mean Rank	Sum of Ranks
S_Gales	Male	46	50.49	2322.50
	Female	57	53.22	3033.50
	Total	103		
Mean_PA	Male	46	53.82	2475.50
	Female	57	50.54	2880.50
	Total	103		
Mean_NA	Male	46	44.83	2062.00
	Female	57	57.79	3294.00
	Total	103		
Mean_BRS	Male	46	60.17	2768.00
	Female	57	45.40	2588.00
	Total	103		

Test Statistics ^a				
	S_Gales	Mean_PA	Mean_NA	Mean_BRS
Mann-Whitney U	1241.500	1227.500	981.000	935.000
Wilcoxon W	2322.500	2880.500	2062.000	2588.000
Z	-.463	-.555	-2.191	-2.499
Asymp. Sig. (2-tailed)	.643	.579	.028	.012

a. Grouping Variable: Gender

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 beta *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
Y : Mean_BRS
X : S_Gales
M1 : Mean_PA
M2 : Mean_NA

Sample
Size: 103

OUTCOME VARIABLE:
Mean_PA

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.1955	.0382	.5018	4.0138	1.0000	101.0000	.0478

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.2988	.1410	23.3988	.0000	3.0191	3.5785
S_Gales	-.0361	.0180	-2.0034	.0478	-.0719	-.0004

Standardized coefficients

	coeff
S_Gales	-.1955

OUTCOME VARIABLE:
Mean_NA

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.0201	.0004	.6753	.0407	1.0000	101.0000	.8404

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.3199	.1636	14.1842	.0000	1.9954	2.6443
S_Gales	.0042	.0209	.2018	.8404	-.0373	.0457

Standardized coefficients

	coeff
S_Gales	.0201

OUTCOME VARIABLE:
Mean_BRS

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.5998	.3597	.4721	18.5409	3.0000	99.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.2063	.4081	7.8563	.0000	2.3965	4.0161
S_Gales	-.0404	.0178	-2.2640	.0258	-.0757	-.0050
Mean_PA	.3770	.0967	3.8966	.0002	.1850	.5690
Mean_NA	-.4350	.0834	-5.2161	.0000	-.6005	-.2695

Standardized coefficients

	coeff
S_Gales	-.1857
Mean_PA	.3203
Mean_NA	-.4206

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

Mean_BRS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2567	.0659	.6751	7.1263	1.0000	101.0000	.0089

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.4408	.1635	21.0410	.0000	3.1164	3.7652
S_Gales	-.0558	.0209	-2.6695	.0089	-.0973	-.0143

Standardized coefficients

	coeff
S_Gales	-.2567

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	c_cs
-.0558	.0209	-2.6695	.0089	-.0973	-.0143	-.2567

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
-.0404	.0178	-2.2640	.0258	-.0757	-.0050	-.1857

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	-.0154	.0126	-.0402	.0089
Mean_PA	-.0136	.0074	-.0289	.0004
Mean_NA	-.0018	.0090	-.0201	.0155

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	-.0711	.0568	-.1794	.0423
Mean_PA	-.0626	.0341	-.1310	.0019
Mean_NA	-.0084	.0405	-.0876	.0718

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

----- END MATRIX -----

**APPENDIX F:
SIMILARITY INDEX**



- Assignments
- Students
- Grade Book
- Libraries
- Calendar
- Discussion
- Preferences

NOW VIEWING: HOME > PSYCHOLOGY > BA/BSC JUNE DEFENSE 2023

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