
# Testing Psychological Flexibility in the Curvilinear Model of Stressful Life Events

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**Abstract**

This study aimed to synthesise recent findings identifying a curvilinear model of Stressful Life Events (SLEs) and a range of good outcomes, with studies finding Psychological Flexibility a more explanatory good outcome underpinning those previously found in this curvilinear model. Participants recruited through social media ($n$ = 298) reporting as Psychologically Flexible and Psychologically Inflexible, as assessed by the Acceptance and Action Questionnaire – II (AAQ-2) were compared in their amount of experienced SLEs at four levels: none, low, medium, and high. This was calculated using the sample mean and spread of data using an adjusted version of the Life Stressor Checklist – Revised (LSC-R). The Big Five Inventory – short (BFI-S) and the Valuing Questionnaire (VQ) were controlled for in a Multiple Hierarchical Logistic Regression. As additional variables were controlled for, medium levels of SLEs remained significant and became more predictive of Psychological Flexibility. Main findings support perspectives that the Yerkes-Dodson Law may be a principle of many facets of human behaviour. Higher VQ scores did not strengthen this relationship, rather, results indicate that AAQ-2 components which may be influenced by SLEs were those pertaining to openness to experience than commitment to values in this analysis. Further, only BFI-S trait Neuroticism significantly predicted Psychological Inflexibility.

*Keywords: Psychological Flexibility, Psychological Inflexibility, valuing, stressful life events, curvilinear model, openness to experience, commitment to values, model testing, big five Personality traits, AAQ-2*

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## Introduction

Research has found higher amounts of stressful life events (SLEs) to incrementally predict greater risks to individual outcomes (Edwards et al., 2003, Classen et al., 2002, & Emery & Laumann-Billings, 1998). In contrast, ample evidence also exists on the benefits of SLEs, with researchers often citing increased certainty regarding what an individual values in life (see Cho & Park, 2013; Linley & Joseph, 2004, for reviews). Though most studies have focused protective factors (see Hjemdal et al., 2006), arguments also pertain to the assumption that SLEs incrementally predict poorer outcomes is a linear fashion (Shakiba et al., 2020, Koss et al., 2018, Seery, 2011, & Seery et al., 2010). Consequently, an emerging body of research has found support for a curvilinear model of SLEs predicting good psychological outcomes at low and medium levels, when compared to a high and a crucially non zero level (Lazić & Gavrilov-Jerković, 2021, Shakiba et al., 2020, Roberston, 2017, Seery, et al., 2013, & Seery et al., 2010). These studies have predicted good outcomes such as greater well-being, emotional resilience, and life satisfaction.

Though, it is critical for future studies to examine more explanatory markers of good outcomes (Park & Helgeson, 2006; Britt et al., 2001). Britt and colleagues (2001) explain that this would better increase the practicality of findings. One such construct with a burgeoning evidence base supporting its status as a process at the heart of these same good outcomes previously found in the curvilinear model is that of Psychological Flexibility (PF) (Kashdan et al., 2020; Yorulmaz et al., 2020). PF benefits from an in-depth theoretical framework, though it can be defined as the ability to accept the presence of destructive thoughts and commit to actions in service of subjective values (Hayes et al., 2009). Studies so far have demonstrated SLEs incrementally increase Psychological Inflexibility (PI) (Lilly & Allen, 2015), but the relationship between PF and SLEs has been less clear (Makriyianis et al., 2019; Gloster et al., 2017). Seery and colleagues (2010) explain most studies do not examine the cumulative nature

of SLE's and thus fail to identify this curvilinear effect. Further, as SLEs foster a more concrete sense of values (Shuwiekh & Ashby, 2018), SLEs may benefit PF.

Therefore, this study aims is to address a gap in existing literature through a synthesis of contemporary developments within SLEs and PF. Factors which may influence this relationship will be controlled for such as Big Five Personality traits, gender, and age. Theories and studies supporting the curvilinear model of SLEs, the relationship between SLEs and PF, and variables which previous studies have demonstrated a possible influence on the variables of focus will be reviewed.

**The Curvilinear Model of Stressful Life Events**

SLEs, also known as adverse events, come in the form of natural disasters, divorce, sexual assault, muggings, the loss of a loved one, or the absence of needs (Dohrenwend & Dohrenwend, 1974). In the opinion of Cohen and colleagues (2019), SLEs differ from other stressors in that they consist of objectively threatening environmental characteristics, and are experienced by most people to different degrees throughout their lives (Cohen et al., 2019). Contextualising current perspectives on SLEs can benefit from a brief trip back to their origin in written word. In Hellenistic times, Plutarch wrote that the end of discord and strife would likely bring about the end of creation and change (Stadter, 1998, p. 270). Whilst the assumption that better outcomes partially rely on difficulty has prevailed. It was not until 1908 that empirical evidence of this type was found in what is known as the Yerkes-Dodson law of optimal performance (Yerkes & Dodson, 1908). This law acknowledges that as stress increases, so too does ability until it reaches a cut-off point where too much stress becomes a problem, resulting in a curvilinear relationship. Despite assertions that this pattern of behaviour encompasses a broader scope of stress experience (Teigen, 1994), this natural law remains largely exclusive to short-term physiological stress (Corbett, 2015). There has only been some empirical evidence within the past decade to support this principle might be extended beyond

short-term stress responses to lasting psychological outcomes (Lazić & Gavrilov-Jerković, 2021, Shakiba et al., 2020, Robertson, 2017, Seery, et al., 2013, Seery et al., 2010).

Evidence for the benefits and disadvantages of SLEs has brought the extent to which this phenomenon can explain responses to stress back into question (Robertson, 2017, Park & Helgeson, 2006, Dohrenwend, 2006, Britt, 2001, and Affleck & Tennen, 1998). Traditionally, research has found SLEs to incrementally increase difficulties in relationships, school and work, as well as vulnerability to future stress (Little & Garber, 1995, Dohrenwend, 1973, Dupéré et al., 2018, Bhagat, 1983, Mayo et al., 2017, Seedat et al., 2009, & McLaughlin et al., 2010). Dienstbier (1989, 1992) theorised simply experiencing some SLEs is likely to increase resilience to future SLEs where an individual has the opportunity to recover. He argues that too many SLEs or none at all make this impossible (Dienstbier, 1989; 1992). Indeed, research also finds SLEs can foster resilience, increase appreciation, improve interpersonal relationships, and contribute to more certainty regarding an individual's values (Park & Helgeson, 2006, Tedeschi & Calhoun, 2004, & Updegraff & Taylor, 2000). Moreover, 60-90% of people report positive effects of exposure to SLEs, with individuals often expressing an increased sense of what is important to them (Tedeschi and Calhoun, 1996). Thus, literature on outcomes of SLEs has been conflicting, with one possible explanation pertaining to the amount of experienced SLEs.

Recent research has taken a closer look at the amount of SLEs experienced in relation to good outcomes. In line with existing literature, negative and positive outcomes associated with SLEs were found, however with positive outcomes occurring at both low and medium amounts, in contrast to none, and high amounts (Lazić & Gavrilov-Jerković, 2021, Robertson, 2017, Seery, 2011, and Seery et al., 2010). When acknowledging the intersection of physiological and psychological processes (Posner et al., 2005), Obradovic (2012) has pointed out that many studies indirectly support this curvilinear model of SLEs but studies directly

testing it are rare. For example, Shakiba et al. (2020) found that children with a medium amount of SLEs experienced less physiological stress reactivity in comparison to children with a low or high amount of SLEs. Seery et al. (2013) demonstrated a more psychological level impact of SLEs in a controlled cold pressor task by showing that a history of a medium amount of SLEs predicted less perceived unpleasantness and more positive affect following controlled stressors. Findings of this nature are still often compartmentalised as physiological findings, as research design is still rooted in physiological reactivity in its use of controlled stressors despite testing psychological outcomes in the context of SLEs. Therefore, studies must extend these findings further within the scope of psychological experience.

The first study of its kind to demonstrate this was conducted by Seery and colleagues (2010). The curvilinear model of SLEs was tested in conjunction with a variety of psychological indicators of good outcomes following SLEs. When using the sample mean as medium and one standard deviation either side as high or low, a low but crucially non-zero amount of SLEs, were found to significantly predict greater well-being, higher life satisfaction, lower global distress, and lower self-perceived functional impairment than a high or no amount of SLEs (Seery et al., 2010). Resultantly, directly testing and providing empirical evidence for the long since theorised curvilinear model of SLEs in the context of good psychological outcomes. More recent research has since expanded on these findings, demonstrating a more traditional u-shape.

Robertson (2017), found a medium amount of SLEs were found to benefit cognitive functioning and emotional resilience. In providing an explanation, Robertson (2017) likened these good psychological outcomes to the Yerkes-Dodson law of optimal performance (Yerkes & Dodson, 1908) explaining the increased pressure of historical stress affords optimal performance in a longitudinal sense through its lasting impact on arousal levels. This increased capacity for well-being was supported again recently by Lazić and Gavrilov-Jerković (2021).

This study indicated this same lasting effect of SLEs on recently experienced SLEs, finding a low and high intensity of perceived negative experiences in childhood subsequently reduces life satisfaction and ability to bounce back following recent SLEs (Lazić and Gavrilov-Jerković, 2021) . Therefore, despite research still being in its early stage, theory and data support the widely theorised curvilinear model of SLEs and a variety of good psychological outcomes.

However, there is a trend in studies examining cause and effect relationships with little attention to processes underpinning them (Britt et al., 2001; Park & Helgeson, 2006). A wealth of research suggests PF may be the process at work giving rise to these surface indicators of adjustment (Kashdan, 2010, Hayes et al., 2003, & Baldwin & Baldwin, 2000), as well as a malleable target for improving responses to SLEs (Gloster et al., 2017). Studies so far have not tested the curvilinear model of SLEs while using PF as a marker of good outcomes.

**Psychological Flexibility as a Marker of Good Outcomes in the Context of Stressful Life Events**

PF is present in all individuals to varying degrees, and a desired treatment outcome in acceptance and commitment therapy (ACT) (Gloster, et al., 2017; Hayes, et al., 2006). In ACT, six processes known as cognitive defusion, acceptance, contact with the present moment, observing the self, values, and committed action can be targeted to improve PF. These core processes are interwoven and can be placed within two central aspects PF: the acceptance of present thoughts and feelings and the commitment to behaviours in service of values. While the theoretical roots of PF are beyond the scope of this paper understanding its core principles supplements the understanding of the relationship between SLEs and PF. PF it built on Relational Frame Theory (Barnes-Holmes et al., 2005). This implies that problems arise for individuals where they cannot separate the process of thinking from the products of thinking (Barnes-Holmes et al., 2005). When this problem co-occurs with a high frequency of SLEs this

may provide more reinforcement of the thought “The world is a dangerous place” this then could manifest in experiential avoidance if verbal processes have a unidimensional regulation of behaviour. Therefore, central to PF is the ability to view thoughts and feelings in their deterministic nature and critically evaluate their utility in choosing behaviours which align with values. As a life which clashes with deeply held values lowers life satisfaction (Oishi et al., 2009). Inversely the inability to do so is referred to as PI (Hayes et al., 2003).

PI levels can accurately predict severity of psychopathology (Fisher et al., 2016; Fledderus et al., 2010), which research widely agrees is influenced to a strong degree by SLEs (Benjet et al., 2016). It is not just directly experienced SLEs which show a relationship with PI. In a study on 9-1-1 telecommunicators experiencing indirect SLEs PI was found to have a direct effect on probable post-traumatic stress disorder at 17.6% to 24.6% and probable major depression at 23.9% prevalence (Lilly & Allen, 2015). Moreover, Makriyianis et al. (2019) found that as adverse childhood experiences increased then so too would PI. Interestingly, they also proposed PF would decrease in this same linear fashion, yet this was not supported, and researchers fell short on providing an explanation as to why. A possible explanation for this unclear relationship could be the same curvilinear relationship found in recent studies into other indicators of good outcomes and SLEs. This study did not integrate the curvilinear model into their design and in doing failed to provide an explanation, therefore this study hopes to explore a possible explanation for this discrepancy.

A number of studies have demonstrated a strong and consistent relationship between PF and well-being (Wersebe et al., 2018), resilience (Meyer, 2019), as well as life satisfaction and mental health (Lucas & Moore, 2020). These effects can also be seen in cornerstones of life such as working style (Bond & Flaxman, 2006), coping behaviours (Vowles, 2014; Vowles & McCracken, 2010), romantic relationships, and parenting (Daks & Rogge, 2020), all of which benefit from higher scores in PF. Studies directly analysing the PF and SLEs broadly in

non-clinical populations are presently rare. The majority of studies focusing on particular types of events, or their relationship to mental illnesses (Fonseca et al., 2020, Meyer et al., 2019, Mikaeli et al., 2018, Matos et al., 2017, Jansen et al., 2017, Hulbert-Williams et al., 2015, & Barrows, 2013, and Hussey & Barnes-Holmes, 2012).

Most study's find PF to significantly mitigate the adverse effects of SLEs (Boykin et al., 2020, Fonseca et al., 2020, Fledderus, 2010, and Bond, 2006). Though, in a non-clinical sample SLEs were not largely moderated by higher levels of PF in relation to health behaviours and well-being as researchers had expected (Gloster et al., 2017). Gloster and colleagues (2017) offered the explanation that adverse effects of SLEs comes less from individual events and more from the impact of cumulative events on everyday stress, making the effect more likely to present with everyday stressors. As mentioned previously SLEs do polarise lasting affect through core arousal processes which is likely more apparent in an individual's interaction to everyday stressors (Posner et al., 2005). Though, this may not fully explain the absence of a stronger direct effect. A reason for this may be found in its exclusive usage of the Acceptance and Action Questionnaire - II (Bond et al., 2011) to measure PF. Some researchers suggest this is overly representative of the ability to co-exist with thoughts and feelings and does not place enough emphasis on progress towards values (Kashdan et al., 2020). Due to literature previously highlighting a more concrete idea of what is valued as an outcome of SLE's (Park & Helgeson, 2006; Updegraff & Taylor, 2000), the inclusion of a measure targeting this component may have produced a more direct relationship with SLE's.

In using their own measure targeting subjective values called the personalised PF inventory (PPFI) Kashdan et al. (2020) found PPFI to mitigate the adverse effects of SLEs through moderating a variety of other indicators of adjustment, namely, well-being, emotional experience and regulation, resilience, goal pursuit, and daily functioning. Therefore, it appears accounting more for the values component within the research design has strengthened the

relationship between PF and good outcomes within the context of SLEs specifically. Therefore, paradoxically, SLEs may also provide an advantage to PF. This would make a central component of PF, the commitment to values, theoretically easier with the influence of SLEs. Possibly explaining the lack of a linear relationship found by Makriyianis et al. (2019).

This leaves PF as a marker of good outcomes within the curvilinear model of SLEs particularly interesting when compared to other constructs used previously (Lazić & Gavrilov-Jerković, 2021, Robertson, 2017, and Seery et al., 2010) As the progress towards values central to its definition, has historically been a central outcome within SLE research (Park & George, 2013; Rogers, 1964). Therefore, integrating PF into the curvilinear model of SLEs may explain many previous findings. However, this relationship is unlikely to exist in a vacuum.

## Factors Influencing Psychological Flexibility and Stressful Life Events

### *Personality*

Due to the volume of literature finding a strong and consistent relationship between Big Five Personality traits (McCrae & Costa, 2008) and good and bad outcomes, Latzman and Akihiko (2013) have suggested personality be included in studies examining other constructs linked to good outcomes. The strongest relationship between Big Five traits and PI has been found with the trait Neuroticism (Steenhaut et al., 2020; Steenhaut et al., 2019, Bond et al., 2013, Gloster et al., 2011, & Gámez et al., 2011, ). Neuroticism is an individual's tendency to negative affect, and has even been found to account for 31% of exposure to SLEs (Plobidis & Frango, 2011). Conscientiousness, and Extroversion, have shown the strongest and most consistent relationship with PF (Steenhaut et al., 2020; Steenhaut et al., 2019, Gloster et al., 2011, Gámez et al., 2011). While that of Agreeableness and Openness are more uncertain (Gloster et al., 2011; Gámez et al., 2011).

Openness, an individual's predisposition towards curiously engaging in a variety of experiences, has been theorised to associate to psychological flexibilities facet of openness to

emotional experiences (Kashdan, 2010). The association found with Agreeableness supports the view that PF manifests first in self compassion which is then extended to others producing better interpersonal relationships (Hayes, 2003). Inversely lower agreeableness predicts SLEs such as divorce (Spikic et al., 2020). Overall, findings are in harmony with the literature finding the traits Conscientiousness and Extraversion to be associated with best outcomes (Turban et al., 2017, Duckworth et al., 2012, Lucas & Diener, 2009, and Roberts et al., 2005). In this way it has been argued that PF may depend on personality configurations (Kashdan, 2010).

However, in contrast to the malleability of PF (Gloster et al., 2017), it's estimated at least 40-60% of the variance in personality can be explained by heritability and is largely unchanging across the lifespan (Power & Pluess, 2015 ; McCrae & Costa, 2008). Therefore, while Personality dimensions may potentially account for some of the range of possible expressions of PF, it is unlikely to depend on Personality. In light of studies finding a curvilinear relationship between SLEs and good outcomes, environmental factors such as SLEs may further explain its precise expression prior to targeted intervention.

***Age***

As people get older they may be are more likely to have experienced SLE's, though, so far studies have not found strong correlations between age and SLE's (as cited in Carstensen et al., 2020). Findings on the association between age and PF remains mixed (McCracken & Velleman, 2010) McCracken and Velleman (2010) found facets of PF, namely, psychological acceptance and progress towards values to positively correlate with age. However, other study's failed to find a relationship between age and PF (Edwards, 2019; McCraken and Yang, 2006).

***Gender***

Like Age, Gender is often a background variable included in most studies. While gender may impact the types of SLEs experienced (Kendler et al., 2001), this study is focused on

amount of SLEs rather than type, which is less relevant currently. Gender has been shown to relate to PF in a study by Alrefi et al. (2020), with male students having higher PF than female students.

**The Present Study**

Recent research has determined low and medium levels of SLEs to be better than none and high levels, however, thus far studies have used unexplanatory markers of good outcomes in this curvilinear model (Lazić & Gavrilov-Jerković, 2021, Roberston, 2017, Seery, et al., 2013, & Seery et al., 2010). These same good outcomes are considered to owe their attenuating effects to the process of PF (Cherry et al., 2021, Lucas & Moore, 2020, Meyer, 2019, Wersebe et al., 2018, and Whiting et al., 2017). Researchers have called for studies analysing SLEs to seek out constructs which might explain the mechanisms which underpin these good outcomes (Park & Helgeson, 2006; Britt et al., 2001). Few studies have tested the impact of SLEs on PF, those that have, have failed to find a consistent linear relationship or to explain why. Further, a major outcome of SLE's is a more concrete sense of what is valued (Park & Helgeson, 2006), potentially complimenting progress towards values in PF. Therefore, it appears plausible that some SLEs may contribute to PF. No studies have integrated the curvilinear model of SLEs in exploring PF so far. Therefore, this study aims synthesise contemporary findings in SLEs by exploring their interplay with PF within the curvilinear model. This study aims to identify a counter-intuitive factor which may contribute to PF and determine the importance of Valuing, as well as to control for covariates potentially influencing results. To accomplish these aims constructs of focus will be operationally defined in the following ways.

In adherence to popular literature SLEs will be understood as objectively threatening environmental events (Cohen et al., 2019). As the sample mean has previously been considered a medium point in studies testing the curvilinear model of SLEs (Seery et al., 2010), this study will define no, low, medium, and high amounts of SLEs by calculating the mean and data

spread to determine cut-off points. PF is defined as the ability to accept thoughts and feelings and commit to actions in service of an individual's values (Hayes et al., 2009). PI is the inability to do so. Cut off points for each category will be determined as per the mean of scores associated with bad and good outcomes in previous studies (Bond et al., 2011).This study takes values to be subjective freely chosen priorities which are maintained by patterns of activity and environmental cues (Wilson, 2009). Thus, higher degrees of Valuing will be understood as an individual's success in progressing towards that which they subjectively value. Lastly, personality will be viewed as consistent and stable characteristics of an individual which research suggests may be largely heritable (Power & Pluess, 2015; Costa & McCrae, 1987).

Thus, owing to the research reviewed the following hypothesis will be pursued:

(1) A low to medium amount of experienced Stressful Life Events will add predictive utility to Psychological Flexibility such that a curvilinear model presents.

(2) Controlling for Big Five Personality traits, Age, and Gender will increase the predictive utility of a low to medium amount of experienced Stressful Life Events on Psychological Flexibility such that a curvilinear model presents.

(3) Controlling for Valuing will decrease the predictive utility of a low to medium amounts of experienced Stressful Life Events on Psychological Flexibility such that a curvilinear model presents.

# Methodology

## Participants

The sample consisted of 298 participants. 178 females and 120 males, with a mean age of 29.80 years (SD = 10.53), ranging from ages 18-72. Of the sample, 59.4% were Psychologically Flexible and 40.6% were Psychologically Inflexible. The mean amount of SLEs experienced was 10.19 (SD = 8.6). The initial sample consisted of 308 participants; 8 were omitted due to not specifying their gender, age, or a lack of generalisability. To reduce the likelihood of a Type 1 error, a G*Power: Statistical Power Analysis (Faul et al., 2009) for Multiple Hierarchical Binary Logistic Regression was conducted to determine a statistically powerful sample size. Results indicated a sample of 121 or more would have a 95% chance of an *R*-squared value significantly different from zero.

The recruitment technique was opportunistic snowball sampling. Links to the study were distributed across social media platforms; Twitter, Reddit, Instagram, and Facebook, and participants were invited to share the study to anyone they believed may be eligible to take part. Given that the sample consisted of web-users, it is advised that results be interpreted in light of this and caution is advised in extrapolating to the general population.

## Measures

### *Demographic Questionnaire*

The demographic questionnaire was created by the researcher (see Appendix B). This first asked participants to indicate their gender which included options ‘Female’, ‘Male’, ‘Prefer not to say’, and ‘Other’ which allowed users to input a response manually. The inclusion of gender was primarily to determine the generalisability of findings. Second, participants were also asked to indicate their age in a text box.

### *The Life Stressor Checklist - Revised (Adjusted)*

The Life Stressor Checklist - Revised (LSC-R; Wolfe et al., 1997) (see Appendix D), is a 30 item self-report measure which gathers information relating to stressful lifetime events. This measure contains three scoring options. Option 1 is scored by assigning a single point to each 30 stressful events which a participant has experienced. This was adjusted in removing three items in keeping with the ethical approval of this study; these were items 22, 25, and 27 which refer to childhood sexual abuse and in allowing participants to indicate if any of the 27 items included was experienced more than once with the inclusion of twice, or three times or more. As it presents in this study 27 questions each refer to an SLE. Answers; 'No'.'Once' and Twice, Three times or more' have a single point assigned to each occurrence. With the adjustment scores will fall within a maximum of 81. An example of a question is as follows: 'Has someone close to you died (do NOT include those who died suddenly or unexpectedly)?. The Life Stressor Checklist - Revised, Option 1, has achieved good levels of reliability and validity in studies (Langford et al., 2017; Norris & Hamblen, 2004). In contrast other measures of experienced stressful events have not gained as high reliability and validity, are still in development, or were not designed in the form necessary for the current study (see STRAIN, Slavich & Shields, 2018; and CLAM, Carstensen et al., 2020). LSC-R (Adjusted) showed very good internal consistency in the current sample ($\alpha = .82$).

***The Big Five Inventory - Short***

The Big Five Inventory - Short (BFI-S; Lang et al., 2011) (see Appendix C), is a 15 item self-report version of The Big Five Inventory (John et al., 1991) based on the NEO theory of Personality developed by Costa & McCrae (1987). This measure of Personality is scored on a 5-point Likert scale ranging from 1 to 5 with 1 representing strong disagreement and 5 with strong agreement with each statement presented. Four of 15 statements cover 5 dimensions of TBF-S. Which indicated good internal consistency in the current sample. These were Openness ($\alpha = .77$), Conscientiousness ($\alpha = .74$), Extraversion ($\alpha = .63$), Agreeableness ($\alpha = .72$), and

Neuroticism (α = .81). Higher scores in each dimension are determined by a single point for each higher number scored on the 5-point Likert scale making maximum scores for each dimension 20. Items 3, 6, 10, and 14 are reverse coded. An example of a statement presented for Openness is as follows: 'I am a person who... is fascinated by art, music, or literature.' The Big Five Inventory - Short has demonstrated good reliability but offers less detailed estimations of The Big Five Inventory traits in comparison to other measures due to its brevity, as indicated by a five-year retest stability study (Lang et al., 2011). As Personality is not a variable of focus, rather a covariate, this has been considered appropriate for this design. Caution will be taken in the interpretation of results.

***The Acceptance and Action Questionnaire - Revised***

The Acceptance and Action Questionnaire - Revised (AAQ-2; Bond et al., 2011) (see Appendix E), is a 7 item self-report measure of Experiential Avoidance or PI; and the most widely used measure of PF. Higher scores indicate higher Experiential Avoidance and thus indicate lower levels of PF. AAQ-2 presents statements which users can rate on a 7-point Likert scale with 1 indicating 'never true' and 7 indicating 'always true' with maximum scores of 49. Within the current analysis questions were coded from 0-6 for comparison with the Valuing Questionnaire (Smout et al., 2014). An example of a statement presented in this measure is as follows: 'My painful memories prevent me from having a fulfilling life'. The Acceptance and Action Questionnaire - Revised has shown good reliability and validity with a mean alpha coefficient of .84 (.78–.88), and good test-retest reliability at .81 and .79 with results also indicating good concurrent and discriminant validity (Bond et al., 2011). The internal consistency for the current sample was excellent (α = .95).

***The Valuing Questionnaire***

The Valuing Questionnaire (VQ; Smout et al., 2014) (see Appendix F), is a 10 item self-report measure of a person's ability to progress towards valued living, another key process

of PF which has been argued to be less represented by AAQ-2 (Bond et al., 2011) This is a two-factor measure; Factor 1 statements refer to a user's progress towards valued living and factor 2 statements refer to a user's obstruction to valued living. Statements 3, 4, 5, 7, and 9 relate to factor 1, while statements 1, 2, 6, 8, and 10 relate to factor 2. The sum of progress scores are subtracted from the sum of obstruction scores making the range encompass minus figures. An example of a statement from factor 1 is as follows: 'I continued to get better at being the kind of person I want to be'. An example of a statement for factor 2 is as follows: 'When things didn't go according to plan, I gave up easily'. The VQ has demonstrated good reliability and validity in both clinical and nonclinical populations, as well as concurrent validity with The Satisfaction with Life Scale (SWLS) and The Valued Living Questionnaire (VLQ). The internal consistency for progress scores was slightly lower than is widely considered acceptable ($\alpha$ = .67), this will be considered when analysing results. Iternal consistency of obstruction scores was good ($\alpha$ = .86).

**Design**

The present study employed a quantitative cross-sectional approach to data collection. A between participants design was used in conjunction to a Multiple Hierarchical Binary Logistic Regression in SPSS to test hypotheses. For Model 1/ Hypothesis 1; the predictor variable was SLEs, while PF was the dependent variable. For Model 2/ Hypothesis 2; Big Five Personality traits, age, and gender were included as covariates. Lastly, Model 3/ Hypothesis 3; added Valuing to determine its influence as a predictor

**Procedure**

An ethics and proposal form was submitted to the National College of Ireland's Ethics Committee. This study was approved and is in line with the NCI Ethical Guidelines and Procedures for Research involving Human Participants as well as the Psychological Society of Ireland Code of Professional Ethics (2019). Due to this study's interest in amounts of SLEs

experienced, care was taken to provide contact details for support services at appropriate points throughout the questionnaire, such as; the information sheet, before and after the questionnaire section relating to SLEs, and finally on the debriefing page.

This questionnaire was designed using Google Forms for use by typically developing adults over 18. The first page contained an information and consent form (see Appendix A), outlining the nature of the study and their right to withdraw without penalty and that it was not possible to withdraw anonymised data following submission. Participants selected a box confirming they read and understood the information sheet and were over 18. As participants selected continue, they were presented the measures. First demographic information, followed by the BFI-S, then the LSC-R, and finally the AAQ-2 and the VQ. Questions within sections were shuffled in an attempt to reduce the effects of fatigue. Then a debriefing page gave the option to submit data. Following submission participants were thanked and invited to distribute the questionnaire to anyone over the age of 18.

This questionnaire was piloted to four participants to ensure there were no issues and to determine the average length of time it took to complete. The average completion time was calculated to be 7 minutes. This questionnaire was then distributed across social media platforms, including Twitter, Reddit, Instagram, and Facebook. Then a Multiple Hierarchical Binary Logistic Regression was conducted to test Hypotheses.

## Results

An alpha level of .05 has been used for all analysis conducted as part of this study. Descriptive statistics for the current sample are outlined below, followed by inferential statistics for the hypotheses in question which have been tested using a Multiple Hierarchical Binary Logistic Regression.

### Descriptive Statistics

Descriptive statistics for categorical variables are found in Table 1 and continuous variables are found in Table 2 below.

***Table 1***

*Descriptive statistics for all categorical variables, N = 298*

| Variable | Frequency | Valid % |
|---|---|---|
| **Gender** | | |
| Female | 178 | 59.7 |
| Male | 120 | 40.3 |
| **Psychological Flexibility** | | |
| Psychological Flexibility | 177 | 59.4 |
| Psychological Inflexibility | 121 | 40.6 |
| **SLE Levels** | | |
| None | 32 | 10.7 |
| Low | 56 | 18.8 |
| Medium | 134 | 45.0 |
| High | 76 | 25.5 |

***Table 2***

*Descriptive statistics for all continuous variables, N = 298*

| Variable | *M [95% CI]* | *SD* | Range |
|---|---|---|---|
| Age | 29.80 [28.60-31.00] | 10.53 | 18-72 |
| Valuing | 10.89 [9.77-12.02] | 9.89 | -13-27 |
| **Personality** | | | |
| Openness | 8.68 [10.35-11.03] | 3.01 | 3-15 |
| Conscientiousness | 10.03 [9.69-10.36] | 2.91 | 3-15 |
| Extraversion | 9.12 [8.82-9.42] | 2.63 | 3-15 |
| Agreeableness | 10.68 [10.39-10.98] | 2.62 | 3-15 |
| Neuroticism | 8.68 [8.34-9.03] | 3.0 | 3-15 |

PF had a significant ($p < .05$) Kolmogorov-Smirnov, and inspection of this histogram indicated it was negatively skewed indicating a non-normal distribution with more people being Psychologically Flexible. A non-significant result for the Kolmogorov-Smirnov statistic was found for each of the other variables included in the study, indicating the majority of the data was normally distributed. Prior to the categorisation of SLEs, continuous SLE scores were non-normally distributed with a significant ($p < .05$) Kolmogorov-Smirnov, inspection of this histogram indicated data was negatively skewed making most individuals within this data set having fewer SLEs. SLEs were categorised using the mean of the sample as the central medium point, then the spread of data was then converted to percentiles, which treated below 25% as low, above 75% as high, and all scores between were treated as medium. After converting to categorical data there was no longer a significant Kolmogorov-Smirnov statistic.

**Inferential Statistics**

A Multiple Hierarchical Binary Logistic Regression was conducted on the likelihood of variables predicting PF. The order of presentation is as follows: Model 1 tested hypothesis 1. Model 2 tested hypothesis 2. Model 3 tested hypothesis 3. Results for each model can be found in Tables 3, 4, and 5 are below.

***Table 3***

*Multiple Hierarchical Binary Logistic Regression: Model 1 Predicting Psychological Flexibility*

| Measure | *B* | *SE* | *Wald* | *OR* | *Lower 95% CI* | *Upper 95% CI* |
|---|---|---|---|---|---|---|
| **SLE Levels** | | | | | | |
| None | | | 49.99 | *** | | |
| Low | -2.95 | 1.04 | 8.00 | .05** | .00 | .40 |
| Medium | 1.78 | .40 | 19.62 | 5.94*** | 2.70 | 13.07 |
| High | 1.68 | .31 | 29.00 | 5.38*** | 2.91 | 9.93 |

*Note*: Statistical significance is presented as * $p < .05$, ** $p < .01$, *** $p < .001$. B = Beta, SE = Standard Error, OR= Odds Ratio.

Model 1 explained 25.9% of the variance in PF (Omnibus test $\chi 2(3, N = 298) = 89.42$, $p < .001$; Hosmer-Lemeshow $\chi 2(2, N = 298) = .00$, $p = 1.00$). Each level of SLEs (none, low, medium, and high) were included as possible predictors of PF. Results for each level were statistically significant; however, medium levels were most predictive of PF, followed by high levels. Neuroticism and none and low levels of SLEs predicted PI significantly.

***Table 4***

*Multiple Hierarchical Binary Logistic Regression: Model 2 Predicting Psychological Flexibility*

| Measure | *B* | *SE* | *Wald* | *OR* | *Lower 95% CI* | *Upper 95% CI* |
|---|---|---|---|---|---|---|
| **SLE Levels** | | | | | | |
| None | | | 18.36 | *** | | |
| Low | -1.79 | 1.23 | 2.12 | .66 | .01 | 1.86 |
| Medium | 1.75 | .66 | 6.94 | 5.79** | 1.56 | 21.37 |
| High | 1.53 | .48 | 9.91 | 4.62** | 1.78 | 11.98 |
| **Personality** | | | | | | |
| Openness | .19 | .08 | 5.47 | 1.21 | 1.03 | 1.43 |
| Conscientiousness | .14 | .08 | 2.69 | 1.15 | 1.97 | 1.37 |
| Extroversion | .10 | .08 | 1.41 | 1.10 | .93 | 1.30 |
| Agreeableness | -.00 | .08 | .00 | .99 | .83 | 1.18 |
| Neuroticism | -.63 | .09 | 45.16 | .52*** | .43 | .63 |
| Age | .02 | .01 | 1.65 | 1.02 | .98 | 1.06 |
| Gender (Ref: female) | -.30 | .44 | .46 | .73 | .30 | 1.76 |

*Note*: Statistical significance is presented as * $p < .05$, ** $p < .01$, *** $p < .001$. B = Beta, SE = Standard Error, OR= Odds Ratio.

Model 2 explained 52.1% of the variance in PF (Omnibus test $\chi 2(10, N = 298) = 219.144$, $p < .001$; Hosmer-Lemeshow $\chi 2(8, N = 298) = 7.49$, $p = .484$). When controlling of covariates Personality, Age, and Gender. Medium levels of SLEs became more predictive compared to high levels of PF. None levels and Neuroticism remained significantly predictive of PI, however, low levels changed direction now predicting PF but no longer significantly.

***Table 5***

*Multiple Hierarchical Binary Logistic Regression: Model 3 Predicting Psychological Flexibility*

| *Measure* | *B* | *SE* | *Wald* | *OR* | *Lower 95% CI* | *Upper 95% CI* |
|---|---|---|---|---|---|---|
| **SLE Levels** | | | | | | |
| None | | | 12.04 | ** | | |
| Low | .32 | 1.40 | .05 | 1.37 | .08 | 21.47 |
| Medium | 2.09 | .71 | 8.63 | 8.09** | 2.00 | 32.63 |
| High | 1.53 | .52 | 8.70 | 4.64** | 1.67 | 12.89 |
| **Personality** | | | | | | |
| Openness | .14 | .09 | 2.65 | 1.16 | .97 | 1.38 |
| Conscientiousness | .02 | .10 | .04 | 1.02 | .83 | 1.24 |
| Extroversion | .02 | .09 | .07 | 1.02 | .85 | 1.22 |
| Agreeableness | -.16 | .10 | 2.41 | 1.20 | .69 | 1.04 |
| Neuroticism | -.51 | .10 | 26.35 | .59*** | .48 | .72 |
| Age | .02 | .02 | 1.58 | 1.02 | .98 | 1.06 |
| Gender (ref: female) | -.21 | .48 | .19 | .80 | .31 | 2.08 |
| Valuing | .19 | .04 | 20.71 | 1.21*** | 1.11 | 1.32 |

*Note*: Statistical significance is presented as * $p < .05$, ** $p < .01$, *** $p < .001$. B = Beta, SE = Standard Error, OR= Odds Ratio.

Model 3 explained 55.9% of the variance in PF and the model showed good goodness of fit (Omnibus test $\chi 2(11, N = 298) = 243.85$, $p < .001$; Hosmer-Lemeshow $\chi 2(8, N = 298) = 4.42$, $p = .817$). When controlling for covariates including Valuing, medium levels of SLEs became significantly more predictive again of PF. None levels of SLEs and Neuroticism significantly predicted PI.

## Discussion

This study introduced to the emerging curvilinear model within SLE research a marker of good outcomes not previously investigated, that of PF. This aimed to synthesise findings from contemporary studies indicating better outcomes occurring at low and medium levels, and; literature finding PF brings these same good outcomes about. There was an identified gap in the literature as research suggests PF may explain the process which gives rise to non-explanatory constructs previously found in the curvilinear model of SLEs. Therefore, this study importantly attempts to explain the process which underlies constructs previously found in this model by comparing the extent to which it behaves equivalently within the model. Explanations for the mechanism underlying existing good outcomes in the context of SLEs has been called for by researchers in this area (Park & Helgeson, 2006; Britt et al., 2001). Thus, this study identified a new, counter-intuitive factor which may contribute to PF.

Hypothesis 1 stated low and medium amounts of SLEs would predict PF. Model 1 indicated prior to controlling for Personality, Age, Gender, and Valuing, all levels of SLEs were statistically significant. As hypothesised medium levels of SLEs were the strongest predictor of PF. Unexpectedly, high levels followed closely while none and low levels of SLEs only predicted PI. Therefore, hypothesis 1 was partially upheld in that medium levels of SLE's predicted PF. Hypothesis 2 then stated controlling for Personality, Age, and Gender would increase this relationship. Indeed, medium levels of SLEs did increase in comparison to other levels. Each remained significant except low levels which changed direction and insignificantly predicted PF. Additionally, results of this analysis did not show any significant predictive relationship between Age and Gender in relation to PF. Of Personality, only Neuroticism had a significant relationship predicting PI. Therefore, hypothesis 2 has been partially upheld in that controlling for Personality, Age, and Gender increased the predictive strength of medium levels of SLE's on PF. Lastly, hypothesis 3 proposed controlling for Valuing would decrease

the predictive utility of low to medium levels of SLEs on PF. However, contrary to expectation medium levels of SLEs became significantly more predictive again. Thus, hypothesis 3 was not supported. Central points of discussion here pertain to the curvilinear model of SLEs and PF, the influence of Personality or lack thereof, and the likelihood of openness to emotional experience rather than Valuing being more important within this context.

Only recently have studies begun to find empirical evidence to extend the curvilinear model of SLEs to good psychological outcomes (Lazić & Gavrilov-Jerković, 2021, Roberston, 2017, Seery, et al., 2013, & Seery et al., 2010). Fittingly, this has co-occurred with reform which has seen psychology approach psychopathology as points along a affective spectrum maintained by core arousal processes common to all (Posner et al., 2005). Findings relating to the curvilinear model of SLE's are in both theoretical and empirical harmony with developments in this field. This study's findings are most consistent with contemporary research finding medium levels of SLEs in the curvilinear model to predict good psychological outcomes such as emotional resilience and cognitive functioning (Lazić & Gavrilov-Jerković, 2021; Robertson, 2017). These findings are to some extent consistent with Seery et al. (2010) who found good outcomes all associated with lower but a non-zero amount of SLEs. Seery et al. (2010) used the mean as a medium point with one standard deviation either side representing high and low. In contrast the current study grouped sections to encompass a larger medium point, making similarities between these studies findings more apparent than labelling and design imply. Thus, this study's findings are in accordance with current literature on the curvilinear model of SLE's and good psychological outcomes.

This study also extends on previous studies by adding more practical application. While previous studies likely intended to explore the nature of phenomena, one wrongly extrapolated implication may be seeking out more SLEs where SLEs are low is a path to better outcomes. In much the same way as the curvilinear model is treated in sport (Sodhi et al., 2016). The

crucial differences must be acknowledged. If not consciously appraised, SLEs can have a unidimensional dictation of future behaviours in their maintenance of negative internal narratives (Denham, 2008). Therefore, much more than momentary stress levels these must be approached with more caution within the context of deriving benefits. Corbett (2015) showed employers misinterpreting findings of this nature attempted to increase employee psychological stress levels without this in mind and reduced work performance significantly. While the majority of the current samples SLE's were low, overall stress levels are generally higher than they should be (Seery et al., 2010). Therefore, attempting to access benefits via increasing SLEs is unlikely to be beneficial. Instead, the present study has identified PF to occur at the same rate as previous good outcomes. Thus, as an accessible and learnable skill (Hayes et al., 2003) these benefits can be accessed without any need to increase exposure to SLEs.

Age, Gender, and Personality did not significantly predict PF. Rather, as hypothesised, controlling for them increased the predictive utility of a medium amount of SLE's. In agreement with the literature, Neuroticism significantly predicted PI (Ploubidis, & Frangou, (2011). A lack of significant predictive association found in relation to other variables is in accordance with results reported by Seery et al. (2010) who also did not find a significant effect of individual differences in testing the curvilinear model. In response to the proposition that PF depends to some extent on personality (Kashdan, 2010). It was argued that as PF is malleable, it would be unlikely to depend largely on a more static construct. The results of this dataset analysis provide more support for the present argument stating they are more influenced by environmental cues such as a medium level of SLE's. However, the BFI-Short is a brief measure of Big Five Personality traits without their subcomponents. This was considered appropriate as this study was simply using it as a covariate, however, a more detailed analysis

may shed more light on the extent to which it's occurrence depends on personality (Kashdan, 2010).

Lastly, contrary to expectations, Valuing was not found to contribute to the predictive utility of SLEs on PF. Instead, removing it's effects increased the predictive strength of a medium amount of SLEs. Given the volume of literature supporting a more certain idea of what an individual values is an outcome of SLEs hypothesis 3 was expected to add further explanatory value. Though, one explanation could pertain to the Cronbach's Alpha for Valuing being weaker than other measures within this study. Secondly, researchers have criticised current measures of Valuing as being unclear and inaccurately grasping the intended concept (Barney et al., 2019; Plumb et al., 2009). However, an alternative explanation can be found in further analysis of the results. Valuing predicted PF significantly however with an odds ratio of 1.21 making a 77% difference in these two measures. Indicating the difference between these measures was what was most influenced by medium levels of SLEs. PF was measured using the AAQ-2 (Bond et al., 2011) which places emphasis on acceptance and openness to emotional experiences in contrast to the progress towards values which was supplemented in this study using the VQ (Smout et al., 2014) measuring Valuing. Therefore, items within the AAQ-2 pertaining to emotional acceptance and openness appear to be significantly more statistically relevant within the context of the curvilinear model of SLEs within the current dataset. Perhaps individuals rely on the ability to accept the presence of destructive thoughts rather than the emotional significance of subjectively constructed value systems to drive behaviours within this context.

**Implications**

The Implications of this study present on two levels, through the support of theoretical development. The results offer a practical extension to existing studies in identifying an explanatory marker of good outcomes to occur at a medium levels within the curvilinear model

as unexplanatory markers have previously done (Lazić & Gavrilov-Jerković, 2021, Roberston, 2017, Seery, et al., 2013, & Seery et al., 2010). A medium amount of experienced SLEs was most predictive of PF, even when compared to a facet of PF: the progress towards values. The implications here is that a medium level of SLEs may contribute to the ability to be open to and non-judgemental of internal experiences such that thoughts and feelings do not have a unidimensional clutch on behaviours. Though a medium level of SLEs appear to contribute to this ability and the good outcomes it is associated with, PF is a process which can be learned therefore where deliberate action is taken these benefits may be accessed by individuals irrespective of level of SLEs experienced.

Ultimately, these findings contribute to the growing body of empirical studies attempting to extend the Yerkes-Dodson Law to encompass long term psychological outcomes in the context of SLEs. These results support existing studies finding the curvilinear nature of core arousal processes which become apparent in physiological stress responses, also exists in long term psychological stress responses (Lazić & Gavrilov-Jerković, 2021, Roberston, 2017, Seery, et al., 2013, & Seery et al., 2010). This is in harmony with recent developments within psychology acknowledging affective states as points on a spectrum. Overall, in extending the curvilinear model to PF, it appears despite the fact bad things do most commonly happen to a medium degree, this attribute of reality facilitates better outcomes. But these better outcomes can also be deliberately accessed through improving PF.

**Limitations and Future Research**

Whilst a strength of the present study is it has synthesised empirically and theoretically relevant, though explicitly isolated, recent empirical findings, it's limitations must also be considered. This study adjusted the LSC-R (Smout et al., 2014) to allow participants to give greater detail in relation to the amount of occurrences of each SLE and removed items relating to childhood sexual abuse in keeping with the ethical approval of the study. Thus, while

increasing the response amount can technically only increase its validity, this measure cannot claim the validation of other studies. This measure did not account for subjective appraisals, differences in event impact, and even though frequencies were extended to three times or more this was still a limit. Measures have attempted to fill these gaps to some degree in integrating subjective appraisals and different event impacts (see Dohrenwend, 2006). Knowledge regarding the precise differences is in development, potentially contributing to coding inaccuracies. Therefore this study remained within the scope of what is already understood with more certainty. Should future research solidify coding schemes, socially relevant SLEs may produce a stronger curvilinear relationship in comparison to those like natural disasters, due to having a more prevailing impact (Keller et al., 2007; Kendler et al., 2001).

It is possible a better way exists to determine categories, low, medium, and high. While the mean and percentiles based on the sample data spread was used here, other approaches such as determining a low, medium, and high point within the general population may be more accurate. However, statistics on this are constantly evolving (Tibubos et al., 2020; Benjet, 2016).

Lastly, the possible influence of other variables must be emphasised. The measurement of Big Five Personality traits was short form and therefore offered rougher estimations of traits. Additionally, variables not included in this study may potentially influencing the results. This research did not take into account participants protective factors or how it may have impacted their psychological resources. Similarly, as this study was distributed to the general population, psychopathology was not accounted for and therefore there is no way to determine if any individuals have undergone acceptance-based therapies in the past which would have improved their PF scores. However, as problems usually present for individuals where SLEs are high, and these scores had less PF so it is unlikely this had an influence on the results. Future studies

should include detailed measures of personality and should take into account protective factors and psychopathology to better determine the influence of different levels of SLEs on PF.

**Conclusion**

This analysis showed controlling for additional variables significantly and incrementally increased the predictive utility of medium levels of SLE's on PF. Despite this providing more support than was expected for the curvilinear relationship, as Hypothesis 1 and 2 conservatively included low levels (in comparison to none) these hypotheses can only be partially upheld. Hypothesis 3 was not supported as controlling for Valuing did not decrease the predictive utility of SLE's on PF, rather it increased it. This unexpected finding indicates the ability to coexist with the presence of destructive thoughts was significantly more statistical relevance within the context of SLEs than an individual's progress towards values. These results offer explanation of the process underpinning previous findings into the curvilinear model of SLEs and good outcomes as well as identifying a factor contributing to PF. In light of this, as Teigen (1994), Robertson (2017), and many others have proposed, the Yerkes-Dodson law may indeed be a principle of many human functions.

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# Appendices

## Information and Consent Form

*Appendix A*

**Who am I and what is this study about?.** I am a psychology student in my final year of a BA Hons in Psychology provided by the National College of Ireland. As part of my degree, I am conducting a research study for my thesis. This study will primarily look at Psychological Flexibility, that is a person's openness to experiences as they occur in the present and their ability to engage in actions consistent with their chosen values. The relationship this variable may have to Personality traits and stressful life events will then be analysed using the data provided by participants. I chose this study as one of the most commonplace tasks we each face is learning how to move forward unhindered by setbacks or difficulties. In doing this study I hope to gather more information about this process.

**What will taking part involve?.**If you decide to take part in this study you will first be required to provide consent by ticking the consent box at the end of this page. You will then be asked to anonymously provide answers to questions on three areas; your Personality, your stressful life events, and your Psychological Flexibility. There is no time limit on submission once you begin, therefore if necessary you are encouraged to take a break and come back to it if you would like. Due to the nature of the questions asked in relation to stressful life events I encourage anyone who feels distressed as a result of these questions to contact the helplines provided at the end of this page. These helplines will be provided at the beginning and end of the stressful life events section should you feel distressed while participating and finally after answers have been submitted should you feel distressed following taking part.

**Do you have to take part?.** Participation is voluntary and you have the right to withdraw at any time without any consequence by simply exiting the questionnaire. If you choose to exit the questionnaire this will be anonymous as your anonymised data is only sent to the researcher once you complete the questionnaire and submit your results.

**What are the possible risks involved in taking part?.** As this study requires information on the type and frequency of adverse events you have experienced, if you decide you would like to participate you will be asked to indicate the frequency of each stressful life event that occurred to you, in the format: once, twice, and three times or more. These stressful events will cover topics such as bereavements, sexual assault, financial difficulty, and domestic abuse, illness or injury. For example:

**What are the benefits of taking part?.** You can provide anonymous information that may help in understanding the behaviours associated with better life outcomes in relation to different degrees of stressful experiences.

**How will information provided be recorded, stored, and protected?.** Answers will be given through the website 'Google Forms' then removed from this site and stored in an encrypted password protected file on the researchers computer.

**Who should I contact for further information?.** If you have any further questions or concerns relating to the use of this data or the questions involved, please do not hesitate to contact myself, Siobhán, by email at siobhan.c.research@gmail.com

**Please take note of the following support services.** In the event that you become distressed as a result of taking part in this study I encourage you to contact any of these numbers. These contact details will also be provided at the relevant section of this questionnaire, as well as at the end of this questionnaire.

**Support Services.** The Samaritans: (01) 872 7700, Pieta House: (01) 623 5606, Aware Support Line: +35316766166

Thank you very much for your time,

Siobhán

siobhan.c.research@gmail.com

By clicking "I consent" below you are consenting that you have read the information contained above, have understood it, are over the age of 18, and wish to partake in this research study

*Response input via tick box*

**Measures**

***Appendix B***

**Demographic Questionnaire.**

Please indicate your gender

- ❑ Female
- ❑ Male
- ❑ Prefer not to say
- ❑ Other

*Answer input to text box*

Please indicate your age in numbers below

*Answer input to text box*

***Appendix C***

**The Big Five Inventory - Short.**

Openness: 7, 8, and 9.

Conscientiousness: 13, 14, and 15.

Extroversion: 4, 5, and 6.

Agreeableness: 10, 11, and 12.

Neuroticism: 1, 2 and 3.

I see myself as someone who ...

1. worries a lot
2. gets nervous easily
3. (reverse coded) remains calm in tense situations
4. is talkative
5. is outgoing, sociable
6. (reverse coded) is reserved
7. is original, comes up with new ideas
8. values artistic, aesthetic experiences
9. has an active imagination
10. (reverse coded) is sometimes rude to others
11. has a forgiving nature
12. is considerate and kind to almost everyone
13. does a thorough job
14. (reverse coded) tends to be lazy
15. does things efficiently

*Answer input via tick box Likert scale: strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, strongly agree*

***Appendix D***

**The Life Stressor Checklist - Revised (Adjusted).** Paste the following link into a search bar for the full unadjusted measure:

https://www.ptsd.va.gov/professional/assessment/documents/LSC-R.pdf

Adjusted measure:

1. Have you ever been in a serious disaster (for example, an earthquake, hurricane, large fire, explosion)?
2. Have you ever seen a serious accident (for example, a bad car wreck or an on-the job accident)?
3. Was a close family member ever sent to jail?
4. Have you ever been sent to jail?
5. Were you ever put in foster care or put up for adoption?
6. Did your parents ever separate or divorce while you were living with them?
7. Have you ever been separated or divorced?
8. Have you ever had serious money problems (for example, not enough money for food or place to live)?
9. Have you ever had a very serious physical or mental illness (for example, cancer, heart attack, serious operation, felt like killing yourself, hospitalized because of nerve problems)?
10. Have you ever been emotionally abused or neglected (for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were "no good")?
11. Have you ever been physically neglected (for example, not fed, not properly clothed, or left to take care of yourself when you were too young)?
12. Have you ever experienced an abortion or miscarriage (lost your baby)?
13. Have you ever been separated from your child against your will (for example, the loss of custody or visitation or kidnapping)?
14. Has a baby or child of yours ever had a severe physical or mental handicap (for example, mentally retarded, birth defects, can't hear, see, walk)?
15. Have you ever been responsible for taking care of someone close to you (not your child) who had a severe physical or mental handicap (for example, cancer, stroke, AIDS, nerve problems, can't hear, see, walk)?
16. Has someone close to you died suddenly or unexpectedly (for example, sudden heart attack, murder or suicide)?
17. Has someone close to you died (do NOT include those who died suddenly or unexpectedly)?
18. When you were young (before age 16), did you ever see violence between family members (for example, hitting, kicking, slapping, punching)?
19. Have you ever seen a robbery, mugging, or attack taking place?

20. Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?
21. After age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent or significant other, slapped,choked, burned, or beat you up)?
22. Have you ever been bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at work or school (for example, a coworker, a boss, a customer, another student, a teacher)?
23. After age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?
24. After age 16, did you ever have sex when you didn't want to because someone forced you in some way or threatened to harm you if you didn't?
25. Are there any events not included that have caused you serious stress? If so please indicate the frequency
26. Have any of the events mentioned above ever happened to someone close to you so that even though you didn't see it yourself, you were seriously upset by it?

*Answers input to tick box: Once, Twice, Three times or more.*

***Appendix E***

**The Acceptance and Action Questionnaire - Revised.**

1. My painful experiences and memories make it difficult for me to live a life that I would value.
2. I'm afraid of my feelings.
3. I worry about not being able to control my worries and feelings.
4. My painful memories prevent me from having a fulfilling life.
5. Emotions cause problems in my life.
6. It seems like most people are handling their lives better than I am.
7. Worries get in the way of my success.

*Answers inputted via a tick box on a 7-point Likert scale: never true very seldom true seldom true sometimes true frequently true almost always true always true.*

***Appendix F***

**The Valuing Questionnaire.**

1. I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me (Reverse)
2. I was basically on "auto-pilot" most of the time (Reverse)
3. I worked toward my goals even if I didn't feel motivated to
4. I was proud of how I lived my life
5. I made progress in the areas of my life I care most about
6. Difficult thoughts, feelings or memories got in the way of what I really wanted to do (Reverse)
7. I continued to get better at being the kind of person I want to be
8. When things didn't go according to plan, I gave up easily (Reverse)
9. I felt like I had a purpose in life
10. It seemed like I was just 'going through the motions', rather than focusing on what was important to me (Reverse)

    *Answers inputted via a tick box on a 6-point Likert scale: Not at all true - Completely true*

**Debriefing Form**

***Appendix G***

Thank you for your participation in the current study into stressful life events, Personality, and Psychological Flexibility.

Due to the anonymous nature of the data gathered in this study, once data is submitted it cannot be withdrawn. However, if you would like to withdraw your data you can do so now by exiting the study. If you choose to do so this is anonymous and without repercussion. If you would like your responses to be included in this study please select submit at the end of this page.

Again, thank you for your participation in this study, your contribution is greatly appreciated and a crucial part of making this study possible. If you know of any friends, family or acquaintances that may wish to take part and meet criteria for eligibility to participate in this study you are invited to forward a link to this study.

If you have any questions regarding any aspect of this study, please contact the researcher at siobhan.c.research@gmail.com.

In the event that you feel distressed by participation in this study due to the sensitive topics covered in some of the survey questions, you are encouraged to contact the following support services:

Support Services: The Samaritans: (01) 872 7700, Pieta House: (01) 623 5606, Aware Support Line: +35316766166

Thank you for your time and contribution,

Siobhan

siobhan.c.research@gmail.com

## Evidence of Data

### *Appendix H*

Model 3 main output.

**Variables in the Equation**

| | | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1[a] | SLE_Total_Levels | | | 12.041 | 3 | .007 | | | |
| | SLE_Total_Levels(1) | .321 | 1.401 | .052 | 1 | .819 | 1.378 | .088 | 21.472 |
| | SLE_Total_Levels(2) | 2.091 | .711 | 8.637 | 1 | .003 | 8.093 | 2.007 | 32.637 |
| | SLE_Total_Levels(3) | 1.536 | .521 | 8.704 | 1 | .003 | 4.646 | 1.675 | 12.890 |
| | Gender(1) | -.215 | .484 | .198 | 1 | .656 | .806 | .312 | 2.083 |
| | Age | .025 | .020 | 1.588 | 1 | .208 | 1.026 | .986 | 1.067 |
| | ExtraversionTotal | .025 | .090 | .078 | 1 | .779 | 1.026 | .859 | 1.224 |
| | AgreeablenessTotal | -.160 | .103 | 2.411 | 1 | .120 | .852 | .696 | 1.043 |
| | ConscientiousnessTotal | .021 | .101 | .043 | 1 | .836 | 1.021 | .838 | 1.243 |
| | NeuroticismTotal | -.519 | .101 | 26.375 | 1 | .000 | .595 | .488 | .725 |
| | OpennessTotal | .148 | .091 | 2.651 | 1 | .103 | 1.160 | .970 | 1.387 |
| | VQ_TotalValues | .195 | .043 | 20.716 | 1 | .000 | 1.215 | 1.117 | 1.321 |
| | Constant | 1.195 | 2.199 | .295 | 1 | .587 | 3.302 | | |

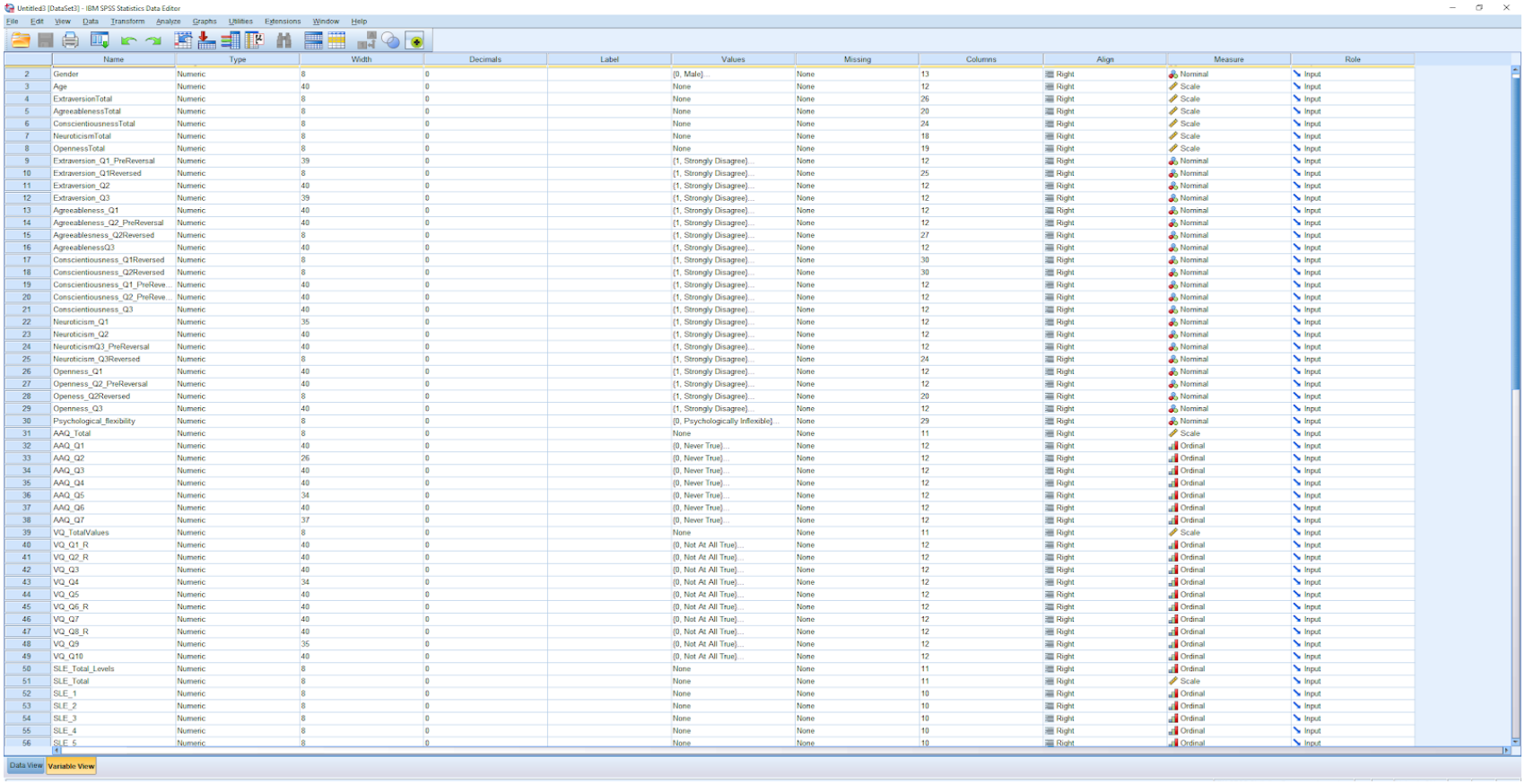
a. Variable(s) entered on step 1: VQ_TotalValues.

**Correlation Matrix**

| | | Constant | SLE_Total_Levels(1) | SLE_Total_Levels(2) | SLE_Total_Levels(3) | Gender(1) | Age | ExtraversionTotal | AgreeablenessTotal | ConscientiousnessTotal | NeuroticismTotal | OpennessTotal | VQ_TotalValues |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Step 1 | Constant | 1.000 | -.262 | -.210 | -.264 | -.084 | -.320 | -.455 | -.247 | -.444 | -.497 | -.356 | .132 |
| | SLE_Total_Levels(1) | -.262 | 1.000 | .294 | .292 | -.054 | .262 | .106 | -.152 | -.043 | .145 | .144 | .302 |
| | SLE_Total_Levels(2) | -.210 | .294 | 1.000 | .553 | -.218 | .418 | .203 | -.189 | -.052 | -.035 | .044 | .178 |
| | SLE_Total_Levels(3) | -.264 | .292 | .553 | 1.000 | -.042 | .397 | .194 | .009 | -.113 | -.040 | -.016 | .064 |
| | Gender(1) | -.084 | -.054 | -.218 | -.042 | 1.000 | -.129 | -.099 | .380 | -.103 | .034 | -.168 | .020 |
| | Age | -.320 | .262 | .418 | .397 | -.129 | 1.000 | -.010 | -.276 | -.090 | .041 | .306 | .037 |
| | ExtraversionTotal | -.455 | .106 | .203 | .194 | -.099 | -.010 | 1.000 | .113 | -.020 | .135 | -.021 | -.125 |
| | AgreeablenessTotal | -.247 | -.152 | -.189 | .009 | .380 | -.276 | .113 | 1.000 | .005 | -.099 | -.345 | -.342 |
| | ConscientiousnessTotal | -.444 | -.043 | -.052 | -.113 | -.103 | -.090 | -.020 | .005 | 1.000 | .128 | .077 | -.246 |
| | NeuroticismTotal | -.497 | .145 | -.035 | -.040 | .034 | .041 | .135 | -.099 | .128 | 1.000 | -.019 | .017 |
| | OpennessTotal | -.356 | .144 | .044 | -.016 | -.168 | .306 | -.021 | -.345 | .077 | -.019 | 1.000 | -.064 |
| | VQ_TotalValues | .132 | .302 | .178 | .064 | .020 | .037 | -.125 | -.342 | -.246 | .017 | -.064 | 1.000 |

## *Appendix I*

Variable view of data.



Untitled3 [DataSet3] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

| | Name | Type | Width | Decimals | Label | Values | Missing | Columns | Align | Measure | Role |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Gender | Numeric | 8 | 0 | | {0, Male}... | None | 13 | Right | Nominal | Input |
| 3 | Age | Numeric | 40 | 0 | | None | None | 12 | Right | Scale | Input |
| 4 | ExtraversionTotal | Numeric | 8 | 0 | | None | None | 26 | Right | Scale | Input |
| 5 | AgreeablenessTotal | Numeric | 8 | 0 | | None | None | 20 | Right | Scale | Input |
| 6 | ConscientiousnessTotal | Numeric | 8 | 0 | | None | None | 24 | Right | Scale | Input |
| 7 | NeuroticismTotal | Numeric | 8 | 0 | | None | None | 18 | Right | Scale | Input |
| 8 | OpennessTotal | Numeric | 8 | 0 | | None | None | 19 | Right | Scale | Input |
| 9 | Extraversion_Q1_PreReversal | Numeric | 39 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 10 | Extraversion_Q1Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 25 | Right | Nominal | Input |
| 11 | Extraversion_Q2 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 12 | Extraversion_Q3 | Numeric | 39 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 13 | Agreeableness_Q1 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 14 | Agreeableness_Q2_PreReversal | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 15 | Agreeablesness_Q2Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 27 | Right | Nominal | Input |
| 16 | AgreeablenessQ3 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 17 | Conscientiousness_Q1Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 30 | Right | Nominal | Input |
| 18 | Conscientiousness_Q2Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 30 | Right | Nominal | Input |
| 19 | Conscientiousness_Q1_PreReve... | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 20 | Conscientiousness_Q2_PreReve... | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 21 | Conscientiousness_Q3 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 22 | Neuroticism_Q1 | Numeric | 35 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 23 | Neuroticism_Q2 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 24 | NeuroticismQ3_PreReversal | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 25 | Neuroticism_Q3Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 24 | Right | Nominal | Input |
| 26 | Openness_Q1 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 27 | Openness_Q2_PreReversal | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 28 | Openess_Q2Reversed | Numeric | 8 | 0 | | {1, Strongly Disagree}... | None | 20 | Right | Nominal | Input |
| 29 | Openness_Q3 | Numeric | 40 | 0 | | {1, Strongly Disagree}... | None | 12 | Right | Nominal | Input |
| 30 | Psychological_flexibility | Numeric | 8 | 0 | | {0, Psychologically Inflexible}... | None | 29 | Right | Nominal | Input |
| 31 | AAQ_Total | Numeric | 8 | 0 | | None | None | 11 | Right | Scale | Input |
| 32 | AAQ_Q1 | Numeric | 40 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 33 | AAQ_Q2 | Numeric | 26 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 34 | AAQ_Q3 | Numeric | 40 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 35 | AAQ_Q4 | Numeric | 40 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 36 | AAQ_Q5 | Numeric | 34 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 37 | AAQ_Q6 | Numeric | 40 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 38 | AAQ_Q7 | Numeric | 37 | 0 | | {0, Never True}... | None | 12 | Right | Ordinal | Input |
| 39 | VQ_TotalValues | Numeric | 8 | 0 | | None | None | 11 | Right | Scale | Input |
| 40 | VQ_Q1_R | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 41 | VQ_Q2_R | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 42 | VQ_Q3 | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 43 | VQ_Q4 | Numeric | 34 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 44 | VQ_Q5 | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 45 | VQ_Q6_R | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 46 | VQ_Q7 | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 47 | VQ_Q8_R | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 48 | VQ_Q9 | Numeric | 35 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 49 | VQ_Q10 | Numeric | 40 | 0 | | {0, Not At All True}... | None | 12 | Right | Ordinal | Input |
| 50 | SLE_Total_Levels | Numeric | 8 | 0 | | None | None | 11 | Right | Ordinal | Input |
| 51 | SLE_Total | Numeric | 8 | 0 | | None | None | 11 | Right | Scale | Input |
| 52 | SLE_1 | Numeric | 8 | 0 | | None | None | 10 | Right | Ordinal | Input |
| 53 | SLE_2 | Numeric | 8 | 0 | | None | None | 10 | Right | Ordinal | Input |
| 54 | SLE_3 | Numeric | 8 | 0 | | None | None | 10 | Right | Ordinal | Input |
| 55 | SLE_4 | Numeric | 8 | 0 | | None | None | 10 | Right | Ordinal | Input |
| 56 | SLE_5 | Numeric | 8 | 0 | | None | None | 10 | Right | Ordinal | Input |

Data View | Variable View