Life regrets and life satisfaction in mature adults

Yetişkinlerde yaşam pişmanlıkları ve memnuniyeti

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Abstract

Individuals have to make many decisions throughout the lifespan. This is very likely to yield some decision outcomes that will leave a decision-maker with the feeling of regret, which can ultimately affect an individual's well-being. The present study demonstrated the psychometric properties of a newly developed scale, the Life Regrets Scale. One hundred and nineteen mature adults between the ages of 39 and 76 completed the Life Regrets Scale. To check the validity of the life regrets scale, participants completed scales assessing the following constructs: life satisfaction, decision outcomes, and positive and negative affect. In addition, participants completed scales assessing dispositional factors including the big 5 personality factors and emotion regulation strategies. It was positively correlated with regret tendency and negative affect and negatively correlated with life satisfaction, positive affect, and decision outcomes. Dispositional variables, including personality factors, emotion regulation strategies, and affect, accounted for a significant amount of variance in predicting life satisfaction. However, life regrets uniquely accounted for variance in life satisfaction more so than dispositional factors. Results suggest that life regrets uniquely contributes to an individual's well-being. The life regrets scale can be a useful tool for quickly assessing the intensity of life regrets that may contribute to an individual's life satisfaction.

 Keywords: Decision-making, well-being, aging, emotion, regret

Özet

Bireyler yaşamları boyunca pek çok karar almak zorunda kalırlar. Bu durum karar veren kişinin pişmanlık duygusu yaşamasıyla sonuçlanabilir ki bu da bireyin sağlığını etkileyebilir. Bu çalışma yeni geliştirilmiş bir ölçeğin (Yaşam Pişmanlıkları Ölçeği) psikometrik özelliklerini ortaya koymaktadır. Yaşları 39 ve 76 arasında değişen 119 yetişkin Yaşam Pişmanlıkları Ölçeği'ni doldurmuştur. Yaşam pişmanlıkları ölçeğinin geçerliliğini test etmek için katılımcılar ölçeği aşağıdaki yapıları değerlendirerek doldurmuşlardır: yaşam memnuniyeti, karar sonuçları ve olumlu ve olumsuz duygular. Ayrıca, katılımcılar kişilik değişkenlerini değerlendiren ölçekler de doldurmuşlardır. Bunların arasında 5 faktörlü kişilik envanteri ve duygu düzenleme stratejileri bulunmaktadır. Pişmanlık eğilimleri ve olumsuz duyguyla olumlu ilişki, yaşam memnuniyeti, olumlu duygu ve karar sonuçları ile olumsuz ilişki ortaya koymuştur. Kişilik faktörleri, duygu düzenleme stratejileri ve duyguyu içeren kişilik değişkenleri yaşam memnuniyetinin kestirimindeki varyansın önemli bir bölümünü açıklamıştır. Ancak, yaşam pişmanlıkları, özellikle yaşam memnuniyetindeki varyansı kişilik faktörlerinden daha iyi açıklamıştır. Araştırma sonuçlarına göre, yaşam pişmanlıkları bireyin sağlığı üzerinde etkilidir. Yaşam pişmanlıkları ölçeği bireyin yaşam memnuniyetini etkileyebilecek yaşam pişmanlık yoğunluğunun hızlı bir şekilde değerlendirilmesinde kullanılabilecek faydalı bir araçtır.

Anahtar Kelimeler: Karar verme, iyi oluş, yaşlanma, duygu, pişmanlık

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Introduction

Adults of all ages must be capable of not only making multiple decisions every day, but also living with the consequences of those decisions. People must deal with the pressure to make good decisions, and subsequently assess their feelings about those decisions. These everyday decisions may influence an individual's well-being, as contentment with each decision might influence how one cognitively appraises his or her satisfaction in life. Furthermore, feeling bad about multiple choices over time may lead to regret, which can have adverse consequences on well-being (Dijkstra & Barelds, 2008; Jokisaari, 2004). Understanding the regret that can result from an individual's decisions is an important aspect of decision-making that needs further investigation, as it ultimately has implications for one's well-being. Regret is a cognitively-laden emotion that is experienced when decision-makers realize or imagine that their current situation would have been better had they chosen differently (Zeelenberg, van Dijk, Manstead, & van der Pligt, 2000). Regret is a commonly experienced aversive emotional outcome of "bad" decisions that is intricately tied to decision-making. The present study developed a new measure of life regrets and examined life regrets as a predictor of life satisfaction above and beyond dispositional factors, such as personality traits.

Development of the Life Regrets Scale

Upon review of the current decision-making literature, one may notice that existing measures often rely on hypothetical decision tasks and offer limited information on real life decision-making. In particular, there is a lack of measures assessing decision outcomes that have actually happened in the real world. Only one measure exists that assesses realistic decision-making outcomes resulting in negative life events that were instigated by their decisions: the Decision Outcome Inventory (Bruine de Bruin, Parker, & Fischoff, 2007). This inventory, however, does not directly assess feelings of regret. One purpose of the present study, therefore, was to develop a measure that assesses the emotional aspect of real-world decision outcomes: the Life Regrets Scale. This is reflected by the extent to which an individual regrets actual decisions they have made in their lives. A pilot study was conducted to generate items for the scale. Items consisted of regrets of inaction and action accumulated over life, rather than minor day-to-day regrets. The following is an example item from the life regrets scale: "Looking back on your life, how much do you regret the way you have handled your finances?" Details about the pilot study are discussed in the Methods section.

The Life Regrets Scale assesses long-term regrets, as it is meant to assess regrets accumulated over one's lifetime. Unlike other scales that indirectly assess regret, the Life Regrets Scale directly inquires how much people regret specific types of life decisions. The specific domains in which life regrets were identified in a pilot study. These domains included regrets about education, occupation, family, relationships, leisure, self, financial, and health. These domains are similar to the domains identified in a nationally representative study on the regrets of the typical American (Morrison & Roese, 2011). Schwartz and colleagues (2002) developed a regret scale that assesses the tendency to regret with items such as, "Whenever I make a choice, I'm curious about what would have happened if I had chosen differently." In contrast, the Life Regrets Scale assesses the emotional intensity of specific regrets accumulated over one's life. This scale, therefore, taps into the emotional aspects of regret, rather than the dispositional tendency to regret. The Life Regrets Scale represents an emotional and subjective component of realistic decision outcomes.

Regret and Subjective Well-Being

The courses of our lives are heavily influenced by our decisions, and thus, the outcomes of our decisions are very likely to affect our subjective well-being (SWB). Life satisfaction reflects the cognitive component of SWB (Diener, Oishi, & Lucas, 2003). A life satisfaction judgment signifies an individual's perceived distance from their aspirations (Diener, Emmons, Larsen, & Griffin, 1985). These judgments depend on comparing one's own life situation with what is perceived to be an appropriate standard (Diener, Emmons, Larsen, & Griffin, 1985). The appropriate standard is not an externally imposed objective standard, rather it is a subjective judgment constructed by the individual assessing his or her own life. Because regret involves aversive feelings towards foregone outcomes due to personal choices, it is likely to factor into the subjective judgment of an appropriate standard for an individual's own life.

The affective component of subjective well-being (SWB) is measured by the frequency of positive and negative emotions an individual feels (Diener & Emmons, 1984). In the present study, participants indicated the frequency of affect experienced in general (as opposed to within the last two weeks or so), and thus was measured as a trait variable, rather than reflecting a transitory emotional state. Affect, measured in this manner, is more representative of a dispositional factor. In the present study, the affective component of SWB was carried out as a predictor variable of the life satisfaction in the analysis.

Regret can have an effect on both cognitive and affective components of well-being. Higher levels of regret have been shown to be associated with lower levels of well-being (Dijkstra & Barelds, 2008). Regret has been shown to relate to lower life satisfaction and higher depression scores, above and beyond the contributions of negative affectivity (Lecci, Okun, & Karoly, 1994). Jokisaari (2004) examined the contents of regrets and found that regrets concerning education and work in particular had a negative impact on life satisfaction, whereas self-related regrets were related to depressive symptoms. Being able to resolve and come to terms with regrets has been shown to contribute to better well-being for adults across ages (Torges, Stewart, & Nolen-Hoeksema, 2008; Dijkstra & Barelds, 2008). The tendency to regret has been linked to lower levels of life satisfaction and happiness, and higher levels of depression (Schwartz, et al., 2002). For older adults in particular, regret has been linked to lower emotional well-being and higher depressive symptoms and disengagement from undoing the consequences of regret was adaptive (Wrosch, Bauer, & Sheier, 2005). In the present study, it was expected the intensity of life regrets would have a negative relationship with life satisfaction.

Dispositional factors such as individual differences in personality and the use of emotion regulation strategies also influence one's subjective well-being. A meta-analysis of the big five factors of personality as correlates of subjective well-being revealed that conscientiousness and neuroticism were the strongest predictors of overall SWB, and most strongly predicted life satisfaction in particular (DeNeve & Cooper, 1998). A higher level of conscientiousness was related to higher levels of life satisfaction, a positive correlation. A lower level of neuroticism related to higher levels of life satisfaction, a negative correlation. Individual differences in the habitual use of different emotion regulation strategies can have a cumulative impact on well-being. In particular, the use of a cognitive reappraisal strategy has been shown to promote well-being, whereas the use of an expressive suppression strategy had an adverse effects on well-being (Gross & John, 2003). Cognitive reappraisal is characterized by changing the way one cognitively assesses a situation that elicits emotions and tends to reduce the experience of negative emotion (Lazarus & Alfert, 1964). Past research has shown that reappraisal is positively correlated with life satisfaction, optimism, and Ryff's (1989) six

dimensions of well-being, and negatively correlated with depression (Gross & John, 2003). Expressive suppression is characterized by concealing the manifestation of an ongoing emotional response (Gross, 1998). Suppression had been shown to be negatively correlated with life satisfaction, optimism, and Ryff's (1989) six dimensions of well-being, and positively correlated with depression (Gross & John, 2003). Additionally, positive affect is positively correlated with life satisfaction, whereas negative affect is negatively correlated with life satisfaction (Diener, Oishi, & Lucas, 2003). In the present study, it was expected that personality traits, emotion regulation strategies, and affect would be significant predictors of life satisfaction.

Accounting for these dispositional variables, it was hypothesized that regret should uniquely predict variance in life satisfaction. According to the regret regulation theory, regret is a distinct aversive emotion that people are motivated to regulate either cognitively or behaviorally (Zeelenberg & Pieters, 2007). Although regret is an aversive feeling, it is distinct from other negative emotions such as sadness, anger, and disappointment (Zeelenberg, van Dijk, Manstead, & van der Pligt, 2000) and therefore, should influence well-being differently than negative affect alone. The intensity in which one feels life regrets involves a sense of personal agency, in which an individual feels a sense of responsibility for their choices in life. As a subjective experience, this is likely to play into the subjective cognitive assessment of one's satisfaction with life. People who feel a greater intensity of life regrets are likely to feel less satisfied with their lives. In accordance with regret regulation theory, it is assumed that people who have a greater intensity of life regrets may not be able to regulate their regret effectively. As regulation of regret ultimately improves life circumstances (Zeelenberg & Pieters, 2007), the lack of effective regulatory activity may underlie an individual's dissatisfaction with their life circumstances.

Furthermore, it is important to examine the influence of regret on well-being in mature adults, those over age 35, because this relationship may operate differently than it does in younger adults. It is necessary to study regret in adults above age 35 because much of the past research on regret has been based on college student samples and thus, may not be very generalizable to the wider adult population. Younger adults, for example, are less likely to have regrets associated with missed learning opportunities or job opportunities because they perceive more chances to fulfill their goals due to a belief that there is much time left in life to attain those goals. In other words, younger adults have more time to pursue unattained goals; they perceive more time left in life to address regrets and to engage in "undoing" regrets (Wrosch & Heckhausen, 2002). Younger adults have reported fewer regrets that involve future opportunities, most likely due to their perception of an expanded time horizon (Carstensen, Isaacowitz, & Charles, 1999). According to socioemotional selectivity theory, as people grow older, their perception of time left in life shrinks. As a result of this shrinking time horizon, motivation shifts towards regulating emotional states to optimize well-being (Carstensen, 2006). Therefore, this motivational shift along with less time to undo the consequences of regrettable behavior may influence mentally healthy mature adults to respond to regret differently in order to minimize its negative impact on well-being. More specifically, with increasing age, regulation of regret may shift away from behavioral strategies towards more cognitive and emotional strategies (Brassen, Gamer, Peters, Gluth, & Büchel, 2012).

The Present Study

The purpose of the present study was to examine regret and its influence on subjective well-being. Specifically, the main aims of this study were to 1) develop and validate a measure of life regrets, and 2) examine the differential predictive power of dispositional factors and life regrets on life satisfaction.

Furthermore, this study concentrated on mature adults over age 35 because people in this age group are more likely to have had the opportunity to experience more real-life decision outcomes than younger adults.

To create a measure of life regrets, a pilot study was first conducted to generate items for the Life Regrets Scale. The Life Regrets Scale was intended to tap into the concept of regret intensity associated with real-life events influenced by adults' decisions. This construct was proposed to be one-dimensional, with feeling "no regret" about one's life decisions at the low end of the spectrum and feeling "very strong regret" about one's life decisions at the high end. The proposed construct is thought to be distinct from other related constructs because it taps into the intensity of actual regret associated with real life experiences, rather than measuring the tendency to regret. The construct of life regrets goes beyond the mere experience of negative affect, as it represents an adverse feeling as a response to particular decisions. To further develop this measure, the present study first determined the best factor structure for this scale with exploratory factor analysis, and then examined its internal consistency and convergent validity.

It was expected that life regrets should potentially relate to the following constructs: regret tendency, life satisfaction, negative affect, positive affect, and decision outcomes. Schwartz's, et al. (2002) measure of regret tendency, the only well-established regret scale available in the literature, should relate to life regrets because people who have a tendency to regret things in life are probably more likely to experience more intense regret in reaction to the actual decisions they have made in life. As mentioned, past research has shown that life satisfaction and negative affect are associated with regret (Lecci, Okun, & Karoly, 1994). It makes sense that having more intense life regrets would be related to being less satisfied with life overall. Although regret is distinct from other negative emotions, it is yet an aversive affective experience that should overlap with the construct of negative affect in general. In relation, having higher life regrets may be related to experiencing less positive affect. Lastly, having higher life regrets should relate to having worse decision outcomes, as feeling regret may be a consequence to making multiple bad decisions. In other words, worse decision outcomes –as measured by the Decision Outcome Inventory (DOI)– may be a major influence on whether a person has life regrets. In the present study, convergent validity was tested by examining the relationships between life regrets and the five aforementioned constructs.

Next, this study examined predictors of life satisfaction, with a particular interest in life regrets as a unique predictor. The big 5 personality traits and emotion regulation strategies have been shown to predict life satisfaction (DeNeve & Cooper, 1998; Gross & John, 2003). Additionally, the tendency towards feeling frequent positive affect is positively correlated with life satisfaction, whereas the tendency to feel frequent negative affect is negatively correlated with life satisfaction (Diener, Oishi, & Lucas, 2003). These variables were examined as predictors of life satisfaction in the present study. Regret has also been shown to have a negative relationship with life satisfaction (Lecci, Okun, & Karoly, 1994). Furthermore, regret, as a distinct aversive cognitively-laden emotion, may be able to uniquely predict life satisfaction because it directly relates to a person's response toward his or her decisions over the course of his or her life. The present study sought to further investigate these relationships by examining if life regrets predicted unique variance in life satisfaction beyond the predictive power of dispositional factors.

The present study examined mature adults over the age of 35. We chose age 35 as the cutoff age because the US Census lists middle age as including adults from ages 35 to 54. Adults over age 35 were selected to participate in the present study because mature adults over this age are more likely to have had the opportunity to experience more decision outcomes represented in the Life Regrets Scale and the Decision Outcome Inventory than younger adults. Therefore, younger adults were not included

in the study because their possible lower scores on the Life Regrets Scale may not necessarily reflect having less regret in life, as it may be confounded with less opportunity for regret.

The following two hypotheses were proposed for the present study:

1) Life Regrets would be positively correlated with regret tendency and negative affect and negatively correlated with life satisfaction, positive affect and decision outcomes.

2) Life regrets would predict life satisfaction above and beyond the effects of personality factors, emotion regulation strategies, and affect variables.

Method

Participants

Participants included 119 mature adults (age range 39-76 years old, *M* = 52.94, *SD* = 7.80). The majority of the participants (83%) were ages 39-59. The sample was 71% female and 80% Caucasian. Participants completed the survey on a personal computer in a variety of locations across the United States, with most participants coming from the Midwest and Northeast areas. Although some participants indicated having a physical chronic disease (e.g. hypertension, diabetes), none of the participants indicated that they had a severe cognitive impairment or dementia. The sample was, therefore, considered to represent a normally intellectually functioning population. Participants were recruited through e-mail using a snowball method. Students in undergraduate Psychology courses received an e-mail containing the URL for the study. They were asked to forward this e-mail to adults over 35-years-old who they knew. The adults who received this e-mail were also asked to forward the e-mail to others who may be interested in participating in the study. As compensation, participants were entered into a drawing to win one of seven gift cards.

Measures

Life Regrets Scale. This is a single-factor self-report construct that measures the extent to which people feel regret for actual events that they have experienced in their lives. Participants rate 9 items (e.g. Looking back on your life, how much do you regret decisions you have made that affect your family; Looking back on your life, how much do you regret decisions you have made that affect your health) on a 5-point scale indicating the extent to which they regret each item (1=No Regret; 5= Very Strongly Regret). Scores are represented by the mean, with higher scores indicating more intense life regrets.

To create a measure of life regrets, a pilot study was first conducted. The purpose of the pilot study was to generate items for the Life Regret Scale. Participants included 121 older adults (age range 60-91 yrs old, *M* = 70.21, *SD*= 7.43) and 122 middle-aged adults (age range 30-59 yrs old, *M* = 47.01, *SD* = 7.30), for a total of 243 participants. Community dwelling adults were recruited on a volunteer basis. The older adult sample was 60% female and the middle-aged sample was 74% female. Participants were asked to list up to six major regrets they had in their lives. These were open-ended responses. Specifically, they were asked, "When you look back on your life to this point, what is your biggest regret? Is there anything else you regret?" They were given the option to list up to six major life regrets. The content of the open-ended regrets were analyzed and coded according to the category in which it belonged. Eight content domains were identified: (1) Education (e.g., "wish I had gone to college), (2) Occupation (e.g., "quitting my job"), (3) Family (e.g., "not spending enough time with

family"), (4) Relationships (e.g., "losing touch with old friends"), (5) Leisure (e.g., "not taking singing lessons or doing plays"), (6) Self (e.g., "wish I was more outgoing in high school"), (7) Financial (e.g., "not saving any money"), and (8) Health (e.g. "started smoking cigarettes"). Inter-rater agreement between two coders for this 8-category scheme was approximately 89%. Items used for the scale reflected each of the categories. One additional item was added to reflect general regret for choices made in life (i.e. In general, how much do you regret having made wrong choices in life).

The Satisfaction with Life Scale. This scale is a single-factor self-report construct that was designed to measure the cognitive component of subjective well-being. Respondents indicate the extent to which they agree or disagree with five statements on a 7-point scale. Higher scores indicate higher life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985).

Positive Affect and Negative Affect Schedule (PANAS). This scale is a two-factor self-report scale that measures the affective component of SWB. Two dominant distinct dimensions consistently emerge in research on affective structure: positive affect and negative affect (Watson, Clark, & Tellegen, 1988). PANAS measures positive affect and negative affect with two independent subscales each containing ten words describing emotions. In the present study, respondents indicated the *extent* to which they feel each emotion *in general* on a scale from 1 (very slightly or not at all) to 5 (extremely). Higher scores indicate higher levels of positive or negative affect.

Regret Scale. This scale is single-factor self-report construct that measures one's tendency to feel regret (Schwartz, et al., 2002). Participants indicate the extent to which they agree or disagree with 5 statements on a 7-point scale. Higher scores indicate higher tendency to feel regret.

Decision Outcome Inventory (DOI). Bruine de Bruin, Parker, and Fischhoff (2007) created the DOI, a self-report measure that represents decision success by reporting real-life decision outcomes. Participants indicate whether or not they have ever experienced any of 41 different negative decision outcomes in the last 10 years. Thirty-five of these negative decision outcomes are preceded by a question asking if the participants have ever had the opportunity to make that decision outcome possible. It is assumed that all participants have made related decisions that could result in the other 6 outcomes. The decision outcomes are weighted by the proportion of participants who reported not experiencing them (among those who had the opportunity) as a proxy for severity. Weighted outcomes are then averaged and subtracted from one. Thus, scores can range from 0 to 1 and higher scores indicate better decision outcomes.

Emotion Regulation Questionnaire. This scale is a two-factor self-report scale that measures two distinct emotion regulation strategies: emotional reappraisal and emotional suppression. The reappraisal factor consists of 6 items. The suppression factor consists of four items. (Gross & John, 2003).

The Ten-Item Personality Inventory (Appendix H). This is a very brief measure of the five-factor model of personality (Gosling, Rentfrow, & Swann, 2003). Each item contains a pair of personality traits, two of which represent each personality domain. In the present study, each personality trait was its own separate item, so that there were 20 total items. Participants indicate their agreement to each item on a 7-point Likert scale.

Design and Procedure

The present study utilized a correlational and cross-sectional design. Participants accessed the survey through a link provided in the recruitment e-mail. They first read the informed consent form and indicated their consent by clicking either, "yes" if they decided to participate, or "no" if they decided not to participate. Next, they completed the background questionnaire. After that, all participants

completed the measures described above in the following fixed order: Regret Scale, the Positive and Negative Affect Schedule, the short Personality Inventory, the Satisfaction with Life Scale, the Emotion Regulation Questionnaire, the Life Regrets Scale, and the Decision Outcome Inventory.

Results

Development of the Life Regrets Scale

To examine the factor structure of the Life Regrets Scale, exploratory factor analyses was conducted using maximum likelihood estimation with a varimax rotation method. The scree plot showed a clear break after the first factor, and thus it was determined that this scale should be treated as unidimensional. All nine of the items loaded above .40 on one factor. This factor accounted for 50% of the variance. Reliability analysis, using Cronbach's alpha as a measure, revealed high internal consistency among the retained items, $\alpha = .87$.

To examine the convergent validity of the Life Regrets Scale, Pearson's correlation analyses were conducted to examine its relationship with other constructs in its nomological net: regret tendency, life satisfaction, negative affect, and positive affect (Table 1). As hypothesized, having higher life regrets was significantly associated with having higher regret tendency (r (115) = .46, $p <$ .001) and higher negative affect (r (115) = .55, $p < .001$). Also as hypothesized, having higher life regrets was significantly associated with having lower life satisfaction (r (115) = -.57, $p < .001$), lower positive affect (r (115) = -.35, $p < .001$), and lower decision outcomes (r (116) = -.26, $p < .01$).

Table 1. *Correlations for life regrets and convergent validity variables (n=119)*

	1	2	3	4	5	6
1. Life Regrets	1					
2. Decision Outcome	-.26**	1				
3. Life Satisfaction	-.57**	.11	1			
4. Positive Affect	-.35**	.01	37**	1		
5. Negative Affect	.55**	-.29**	-.50**	-.41**	1	
6. Regret Tendency	.46**	-.27**	-.23*	-.21**	.51**	1

$* = p < .05; ** = p < .01$

Predictors of Life Satisfaction

To examine the differential predictive power of dispositional factors and life regrets on life satisfaction, a hierarchical regression analysis was conducted with life satisfaction as the dependent variable. The dispositional factors were entered on the first step (i.e. Model 1), and life regrets on the second step (i.e. Model 2). See Table 2 for regression coefficients in Model 2. The first model, with the dispositional factors, was a significant predictor of life satisfaction, F (9, 107) = 7.29, $p < .001$. The specific significant predictors when examining the beta coefficients were conscientiousness ($\beta = .22$, p < .05), agreeableness ($\beta = -.24$, $p < .05$), emotion reappraisal ($\beta = .23$, $p < .01$), and negative affect ($\beta =$

-.25, p < .05). The second model, adding life regrets, significantly predicted life satisfaction, F (10, 106) = 9.53, p < .001, explaining 42% of the variance. A significant F-ratio was obtained when comparing the amount of variance explained in Model 1 (ΔR^2 = .38) with the amount of unique variance explained in Model 2 (ΔR^2 = .09). Adding life regrets into the equation rendered agreeableness (β = -.10, p> .05), and negative affect (β = -.08, p > .05) to non-significance, so that only life regrets (β = -.40, p < .001), conscientiousness (β = .20, p < .05), and emotion reappraisal (β = .21, p < .01) remained as significant predictors of life satisfaction in Model 2.

Table 2. *Hierarchical regression analysis: Predictors of life satisfaction, standardized regression coefficients*

Variables	B	SEB	β	t	p
Personality					
Extraversion	-.07	.10	-.06	-.71	.48
Agreeableness	-.13	.12	-.10	-1.09	.28
Conscientiousness	.25	.12	.20	2.15	.03*
Emotional stability	.15	.12	.14	1.23	.22
Open to experience	-.26	.13	-.16	-2.00	.05
Emotion regulation					
Reappraisal	.32	.12	.21	2.64	.01*
Suppression	.06	.08	.05	.66	.51
Affect					
Negative	-.15	.23	-.08	-.66	.51
Positive	.21	.18	.11	1.17	.24
Life regrets	-.64	.15	-.40	-4.33	.001**

*p < .05, **p < .01

Discussion

The purpose of the present study was to further investigate life regrets and its relation to the well-being of mature adults. First, the present study developed a new scale measuring the intensity of life regrets and found that its convergent validity and reliability were adequate. Second, this study investigated how different aspects of decision-making and dispositional factors differentially predict the cognitive component of subjective well-being: life satisfaction. Life regrets turned out to be a significant predictor of life satisfaction above and beyond dispositional factors.

The Life Regrets Scale assessed the intensity of regret felt towards real-life decisions. This study found this scale to be unidimensional, reliable, and valid. Although this scale was related to comparable constructs, it offers a unique measure of realistic life regrets to the existing literature. The Life Regrets Scale goes beyond existing measures of regret that merely assess the tendency to regret (Schwartz, et al., 2002) and assesses the long-term aspects of regret felt towards specific real-life decisions.

It is also important to note that the Life Regrets Scale was significantly correlated with the cognitive and affective components of subjective well-being measures: life satisfaction, positive affect, and negative affect. It is possible that life regrets may be an additional component of well-being that should also be considered when assessing subjective well-being. All things considered, the Life

Regrets Scale will be useful in future research examining how the emotional consequences of actual decisions may be related to other constructs.

To start off, it is useful to examine the correlations between life satisfaction and the rest of the variables used to test convergent validity. One interesting pattern that emerged was the correlation between life satisfaction and life regrets as compared to the correlation between life satisfaction and regret tendency. Life regrets was more strongly correlated with life satisfaction than regret tendency. This finding suggests that life regrets may be a more useful measure of regret to use when considering an individual's well-being. Another noteworthy pattern was the lack of a correlation between life satisfaction and decision outcomes (DOI). This finding might imply that it is not the actual objective outcome of decisions that really matter when it comes to the subjective evaluation of one's satisfaction in life, but rather the cognitively-driven emotional response to that outcome, namely regret. This finding may indirectly support the proposition that a person's construal of an event determines regret (Zeelenberg & Pieters, 2007).

A hierarchical regression analysis was used to examine predictors of life satisfaction, with dispositional factors in the first step, and life regrets in the second step. Dispositional variables significantly predicted life satisfaction, supporting the second hypothesis. In line with prior studies (DeNeve & Cooper, 1998; Gross & John, 2003), personality traits and emotion regulation strategies accounted for much of the variance in SWB in the present study. This speaks to the importance of these individual differences in personality and the use of emotion regulation strategies in predicting SWB.

The variables that remained significant predictors of life satisfaction in Model 2, after life regrets was added to the regression equation, were conscientiousness and emotional reappraisal. This makes sense because these two variables had positive relationships with life satisfaction, whereas agreeableness and negative affect had negative relationships with life satisfaction just as life regrets did. Conscientiousness has been linked to a host of beneficial outcomes, such as good health (Mroczek, Spiro, & Griffin, 2006), longevity (Martin, Friedman, & Schwartz, 2007), and, of course, life satisfaction (DeNeve & Cooper, 1998). This trait may be particularly relevant to middle-aged and older adults as indicated by past findings which revealed that conscientiousness peaked in middle age (Donnellan & Lucas, 2008) and continued to develop in late life (Roberts, Walton, & Bogg, 2005). This personality trait is one that mature adults may strive to possess when trying to achieve optimal well-being. The emotion regulation strategy of cognitive reappraisal involves an individual changing the way they appraise an emotionally provoking situation in attempt to reduce undesirable feelings (Lazarus & Alfert, 1964). This strategy may be especially pertinent to middle-aged and older adults who may shift their regulation of undesirable feelings, including regret, away from behavioral strategies towards more cognitive strategies (Brassen, Gamer, Peters, Gluth, & Büchel, 2012).

More importantly, the results of the hierarchical regression analyses revealed that life regrets uniquely predicted variance in life satisfaction. In other words, life regrets explained a significant amount of variance in life satisfaction that dispositional factors did not. Therefore, life regrets appears to be an important factor contributing to the cognitive component of subjective well-being and should be considered in addition to dispositional factors when assessing SWB. The unique predictive power of life regrets on life satisfaction also speaks of the distinctiveness of regret, as proposed by regret regulation theory (Zeelenberg & Pieters, 2007). The negative relationship that life regrets had with SWB is consistent with prior research (Wrosch, Bauer, & Scheier, 2005; Jokisaari, 2004). Similar to previous studies that have shown that regret is predictive of SWB above and beyond negative affectivity alone (Lecci, Okun, & Karoly, 1994), the present study showed that adding life regrets to the equation rendered the relationship between negative affect and life satisfaction to non-significance.

The findings in the present study add upon those previous findings by showing that life regrets is predictive of SWB above and beyond dispositional factors. Possessing adverse feelings towards life decisions appears to take a toll on the well-being of mature adults.

These findings can be interpreted in accordance with regret regulation theory, which states that people are motivated to regulate feelings of regret in order to improve their well-being (Zeelenberg & Pieters, 2007). As seen in the results, we can predict that adults who have lower levels of regret are likely to have higher levels of life satisfaction. In line with this theory, people who have lower levels of regret intensity may have developed effective regulation strategies in dealing with life regrets and this may contribute to being more satisfied with their life circumstances. The present study, however, did not directly test the use of regulation strategies. It will be useful to examine the role that regulatory activity plays in the link between regret intensity and life satisfaction in future studies.

As the majority of the research on regret consists of young adult samples, the present study contributes to this body of research by examining regret in a sample of mature adults, ages 39-76. Reliance on college students does not allow researchers to see much variability in objective life circumstances that potentially give rise to regret because young adults have had overall less life experiences than middle-aged and older adults. With the use of a middle-aged and older adult sample, we get a glimpse at a more diverse picture of the life circumstances that can lead to regret. The life regrets scale includes regret in response to domains of objective life circumstances that many young adults may not yet be able to completely identify with. Moreover, an individual's objective life circumstances, including his or her accomplishments and shortcomings, have been shown to determine regret (Morrison & Roese, 2011). Conversely, it has been proposed that an individual's construal of an event gives rise to regret, rather than objective events themselves (Zeelenberg & Pieters, 2007). With regards to the findings of the present study, the objective life events themselves do not seem to affect life satisfaction, as the DOI was unrelated to life satisfaction. Yet, the decision outcomes or objective life circumstances were correlated with life regrets, as better decision outcomes were associated with lower levels of regret. Therefore, it seems that objective life circumstances may lay the groundwork for regret, but it is the construal of those objective circumstances that may ultimately affect life satisfaction. Through the development of the Life Regrets Scale and the findings of its relationship with life satisfaction, the present study offers another valuable step towards understanding the complexity of regret and well-being.

Limitations and Future Directions

One limitation of the present study was the use of convenience sampling. The sample heavily consisted of female participants, which affects the generalizability of the results to the male population. The uneven gender distribution is not representative of the general national population. Future studies should include an even distribution of male and female participants. In addition, the majority of the participants were Caucasian, slightly more than represented in the national population. It is important for future studies to include more ethnic minorities to better understand how issues regarding aging, decision-making, and well-being may work differently according to an individual's ethnic background.

Furthermore, the use of an online survey may pose as another limitation to the present study. This may be one reason why the present study did not recruit as many older adults as middle-aged adults, as more older adults may have been deterred by the idea of having to participate through the means of a computer. It would be very beneficial to study regret using participants of a wider age range, as the relationship between regret and well-being may operate differently in late life than in

midlife. Future studies may obtain better rates of recruitment for older adults if conducted in person. In addition, it may be useful for future studies to examine the effects of domain-specific regrets on well-being. Finally, this study was correlational and thus, causality cannot be implied in any of the findings.

Implications

The results regarding predictors of the cognitive component of subjective well-being (i.e. life satisfaction) can be applied to mental health counseling. The findings suggest that the intensity of life regrets should be considered when assessing and remedying an individual's mental health. The study also introduced the Life Regrets Scale. Although this measure must be further established in future studies, it offers a valuable and convenient way to tap into the affective component of actual decision outcomes. As the findings of this study show, this measure can be very telling of an individual's subjective well-being. The life regrets scale can be a useful tool for quickly measuring the intensity of life regrets that may underlie an individual's dissatisfaction in life. Assessing if life regrets underlie problems with well-being can help direct what approach a mental health professional may want to take when confronting a patient's issues. Maintaining optimal well-being up through late life is a goal every adult can aim towards. Understanding the intensity of the underlying regrets that one has accumulated over a lifetime may be a key factor in helping an aging adult reach optimal subjective well-being.

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