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Episodic Salutary Experiences (ESE): A New Type of Positive Affect and its Relationship to Physical Health

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Episodic Salutary Experiences (ESE):

A New Type of Positive Affect and its Relationship to Physical Health

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ABSTRACT

Prior work has shown that positive affect is related to and can foster physical health. Recently, a subtype of positive affect has been identified, known as episodic salutary experiences (ESE). These experiences seem to be a type of positive affect or, alternatively, may produce a type of affective state that has not previously been studied. ESE is defined as spontaneous episodes of inner peace and lack of conflict that are noticeably different from one's normal state. A cross-sectional study was undertaken to determine if ESE is associated with physical health, and if so, which aspects of ESE are most close related to physical health. Measures of ESE, physical health, and potential correlates of the two primary variables were administered to a sample of participants recruited through online procedures. The results partially supported the ESE-health association and indicated that the experience of serenity during ESE probably contributes to the association in a central way.

Episodic Salutary Experiences (ESE):

A New Type of Positive Affect and its Relationship to Physical Health

INTRODUCTION

Picture this: the day has just begun. You are walking to school or work, the same walk you take every day. The sun is shining and the temperature is perfect. Nothing horrible or extraordinary has happened; the walk is rather relaxing and refreshing. Your headphones are in and suddenly your favorite song begins to play. "So maybe this day will turn out well," you think to yourself. Nothing bad has happened, there is nothing to complain about, and everything is just really good. Then you tune back into your song, singing the words. Happy to be where you are, you continue, as a state of serenity and relaxation arises within you.

That feeling of having "nothing to complain about, no worries, everything is just good" is something referred to as an Episodic Salutary Experience (ESE) (Giesler, et al., 2011). The hallmark feature of these moments of ESE are feelings of inner peace, a type of positive emotion. These moments seem to occur in different situations for different individuals, but are triggered by a specific environmental context. ESE seems to be different and distinctive from other positive emotions but may have some of the same effects that those emotions have.

For example, those who experience happiness, contentment, pride, love, and other positive emotions benefit in multiple ways. High self-esteem, good relationships, success in school or work, and better health are all benefits that can occur from experiencing positive emotions (Pressman & Cohen, 2005). Richman et al. (2005) focused specifically on the relationship between positive emotion and health. After acquiring a random

sample from a multispecialty practice database (n = 1,041), a questionnaire was administered that assessed positive affect. The findings indicated that positive emotion was associated with a decreased likelihood of having or developing a disease, showing that positive emotions may play an important role in protecting health (2005). In general, numerous studies have found a direct link between positive emotions and health. However, the effects of specific types or positive emotions, in particular, have yet to receive much attention.

Positive Affect Comes in Different Varieties

Pressman and Cohen (2005) define positive affect as feelings that reflect a level of pleasurable engagement within the environment. These feelings can be brief, longer lasting, or entail more stable, trait-like feelings. Discrete positive emotions can be experienced individually. Other emotions often go hand in hand with one another, meaning one may experience more than one of these emotions at the same time. For instance, after accomplishing something that is very important and time consuming, most individuals experience both pride and happiness. There are many types of positive affect, including amusement, awe, contentment, gratitude, interest, joy, love, and pride (Fredrickson, 2001; Sauter, 2010). In the past, positive emotions were often treated as a single entity. Only recently have researchers begun to examine how positive emotions differ from one another and whether those differences matter.

For example, several recent investigations have focused on the emotion of pride. Pride is one type of affect that tends to be more obviously expressed than others. Tracy and Matsumoto (2008) took photos of medalists from over 30 nations during the Olympic Games. Winners of competitions all seemed to exhibit the same expressions—raising

their arms, tilting their head back, and smiling. Blind Olympic athletes also tended to show the same expressions after winning a competition (Sauter, 2010), suggesting that the expression of pride is a biologically hard-wired response. Other positive emotions may not be expressed as obviously as pride. For example, gratitude may not be as noticeable in terms of expression. Research into varieties of positive emotions has only recently begun, leaving open the possibility that many kinds have yet to be identified.

Positive Emotions and Health

Numerous studies have examined the relationship between positive affect and health (Fredrickson & Losada, 2005; Moskowitz, 2003; Petit et al., 2001). Research consistently shows that positive affect is linked to reports of fewer symptoms, less pain, and better health (Pressman & Cohen, 2005). The impact of positive affect on health may occur for many reasons, including direct biological links. For example, Futterman et al. (1994) found that positive emotions have been associated with a better functioning immune system, whereas those who exhibit larger amounts of negative emotions often experience the opposite. The experience of negative affect leads to detrimental outcomes, ranging from cardiovascular disease (Kubzansky & Kawachi, 2000) to diabetes (Lustman, Frank, & McGill, 1991).

Steptoe et al. (2005) were interested in looking at biological factors associated with health and how positive affect might play a role in this relationship. Three factors were studied—neuroendocrine, inflammatory, and cardiovascular activity. Positive affect was assessed by having participants briefly report how much happiness they were feeling at random moments. Higher frequencies of positive affect were associated with reduced activity across all three biological variables, which would have the effect of lowering risk

for many diseases and early mortality (Steptoe et al., 2004). In studies focusing on older adults, positive affect is consistently associated with lower mortality rates (Pressman & Cohen, 2005).

The impact of positive affect on health may be quite strong. In a five-year longitudinal study, Beyamini et al. (2000) evaluated the health and positive affect levels of residents in a retirement community using self-report measures. Participants were assessed over several follow-up periods ranging from 1 to 5 years. In this study, those who reported high levels of positive affect at baseline were more likely to report better health during every follow-up period.

Episodic Salutary Experiences (ESE): A New Type of Positive Affect?

Recently, a subtype of positive affect has been identified, known as episodic salutary experiences (ESE) (Giesler et al., 2011). These experiences seem to be a type of positive affect or, alternatively, may produce a type of affective state that has not previously been studied. As noted earlier, ESE are spontaneous episodes of inner peace and lack of conflict that are noticeably different from one's normal state. Prior work conducted by our lab shows that these feelings typically last anywhere from a few minutes to an hour, although some people have reported longer periods of ESE lasting between a few hours up to a full day. Episodes of ESE are mostly likely to be experienced in complete solitude or when with loved ones such as family, friends, significant others. Moments of ESE have been reported in nature, such as when on long walks within the woods. Also, those who have a spiritual side have reported experiencing moments of ESE while practicing that spirituality. These spiritual ESE moments have been reported taking place while within a place of worship or simply reading religious

passages alone. An important factor that distinguishes ESE from other similar states is that ESE does not involve high levels of arousal, like awe and some of the other positive emotions. Moments of ESE are consistently characterized by those who report them as moments of relaxation, serenity, or contentment. Another factor that distinguishes ESE from most emotions is that ESE tends to manifest gradually and then dissipate at the same rate. The environment seems to play a large role in this experience. One has to be in the right psychological state and then enter into a specific environment in order for an episode of ESE to be triggered (Giesler, et al., 2011).

We think that these moments of ESE could play an important role in health just like other positive emotions. These moments could increase health psychologically, physically, or both. Two prior studies have found weak links between ESE and physical health (Giesler, et al., 2011), although health was assessed using measures (e.g., single items) that may have possessed low levels of reliability. The proposed study will attempt to: 1) confirm that ESE is indeed linked to physical health using more reliable and a greater variety of self-report measures and 2) explore more deeply the experience of ESE in an attempt to determine which specific facets of ESE are most closely linked to physical health. Secondary aims include examining potential correlates of ESE to better characterize it and help establish its validity.

OVERVIEW

A questionnaire was administered to a large sample of participants recruited using Amazon's Mechanical Turk, an internet-based method of collecting data. The survey consisted of a variety of items and scales assessing ESE, physical health, and other potential correlates of these two primary variables.

METHOD

Participants

Participants (N = 339) were recruited through Mechanical Turk (MTurk), a service provided by Amazon that social scientists increasingly use to recruit participants. Various tasks that can be accomplished online, including participating in research studies, are posted in a centralized clearinghouse; MTurk 'workers' view the available tasks and their pay rate and then make decisions about which tasks to undertake. MTurk allows for quick recruitment of a diverse sample of participants at a much lower cost than other online sample methods (Berinsky et al., 2012). Various studies have examined the data produced by MTurk samples and have found that data quality is similar to that obtained through more traditional methods (Buhrmester et al., 2011; Shapiro et al., 2013). For example, Weinberg et al. (2014) found that MTurk respondents pay as much or more attention to online surveys compared to respondents from other populations. A Google Scholar search indicated that over 15,000 papers containing the phrase "Mechanical Turk" were published between 2006 and 2014, including hundreds of papers published in top-ranked social science journals (Chandler & Shapiro, 2016). In the current study, participants were paid $1.50 for participating in a 15 to 20 minute survey.

Participants' ages ranged from 18-67, with a mean age of 35.52 (SD = 10.52) years. About 49% identified as female, 50% identified as male, and 1% identified as other. The sample was primarily White (76%), although 7% were Hispanic, 7% were Asian, 6% were African American, and 4% were a mix of other ethnicities and races. About 44% had less than a college degree, 49% had a college degree, and 7% had a masters or PhD level degree.

Procedure

Prior to data collection, Institutional Review Board (IRB) approval was requested and attained in order to study human participants. The online questionnaire contained a combination of previously validated and newly developed self-report measures that assessed the primary variables, 1) episodic salutary experiences (ESE) and 2) physical health. To reduce demand characteristics, health items were administered first; ESE items were administered second. Several other variables potentially related to ESE were also assessed as a means to help further establish its validity. This survey was designed using Qualtrics, and participants were able to access it through MTurk by clicking on a one-time use anonymous link. The survey was structured such that those who reported experiencing at least one episode of ESE were asked additional questions intended to produce deeper insight into how ESE is experienced and conditions that trigger ESE. The specific measures are described next.

Primary Measures

1. Episodic Salutary Experiences (ESE)

ESE was assessed using the following single item, similar to prior investigations: "People sometimes describe moments/episodes in their life when they experience a significant positive feeling of inner peace, an absence of inner conflict that is noticeably different from one's normal state. This feeling can be quick or last awhile and is usually accompanied by feelings of contentment, serenity, tranquility or bliss. You may have experienced this feeling when alone or with others. Which of the following best describes how often you've experienced these sorts of moments?" Participants respond to this stem using a 7-point, Likert-type scale, anchored by 'never' to 'most every day.'

Additionally, we also used the following item as a secondary measure of ESE for those who reported at least one episode: "When you experience such moments of inner peace, how 'deep' a sense of contentment, serenity, tranquility do you typically experience?", which is answered on a 7-point Likert type scale anchored by 'just a bit more relaxed than normal' and 'completely and fully at ease mentally and physically.' This is a new item we have not utilized previously.

Finally, a series of one-item questions were asked that were designed to allow us to better characterize ESE, including its triggers, and to assess aspects of ESE that might be particularly related to health. As stated earlier, identifying which specific aspects of ESE might predict health could provide insight into *how* ESE might promote health. These questions asked about the extent to which different positive emotions, in addition to serenity/inner peace, are experienced during ESE, whether episodes begin/end gradually, how the passage of time is experienced during ESE, whether ESE occurs in the context of drugs/alcohol, sex, or after physical exertion, how aware of one's thoughts and feelings a person is during ESE, and a variety of other aspects. These questions are included in the Appendix.

2. Physical Health

Several physical health self-report measures were used in the survey. These were: 1) a symptom measure that counts the number of acute symptoms (e.g., runny nose, headache, etc.) experienced during the past two weeks, 2) a comorbidity measure that counts the number of chronic diseases/conditions (e.g., diabetes, heart disease, etc.) experienced by a participant, 3) a single, 5-point, Likert-type item measure assessing how often physical health restricts activities anchored by 'completely' and 'not at all,' 4) a

single item measure of typical pain level anchored by ‘none’ and ‘very severe,’ 5) a single item measure of global health using a 5-point scale anchored by ‘poor’ and ‘excellent,’ and 6) a single item measure of overall health similar to the traditional ‘health thermometer’ (Anderson et al., 1996), such that participants are asked to rate their health using a ‘slider’ on a 0 to 100-point scale. These items or items similar to them are frequently used in health-related work.

Other Measures

1. Intrinsic Religiosity

The Intrinsic Religious Motivation Scale (IRMS; Hoge, 1972) was used to assess religiosity. This scale has been previously validated and consists of 10 six-point likert-type items anchored by ‘Agree’ or ‘Disagree.’ Example items include “My faith affects all parts of my life” and “My religious beliefs are what really lie behind my whole approach to life.” The IRMS measures an individual’s level of intrinsic religiosity. Specifically, the scale measures the extent to which individuals ‘internalize and fully follow [their beliefs]’ (Allport & Ross, 1967). Intrinsic religiosity has consistently been shown to predict mental and physical health in a wide variety of populations (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006; Koenig, George, & Peterson, 1998; Koenig et al., 2004; McCullough et al., 2000). We included the measure in the current study because ESE has consistently correlated with religiosity in prior studies. Demonstrating the same correlation in an MTurk sample, a type of sample we have never used before, would suggest our ESE measures are functioning appropriately. In the current sample, Cronbach alpha = .89.

2. Trait-Level Emotions

The Emotions Scale (Berenbaum, Chow, Schoenleber, & Flores, 2016) uses a 5-point response scale (1 = very slightly or not at all, 5 = extremely) to assess to what extent a series of emotion terms generally describes the respondent. Subscales include 1) vigor, measured using the emotion terms active, energetic, and vigorous (Cronbach alpha = .85), 2) cheerfulness, measured using cheerful, fun, and happy (Cronbach alpha = .91), 3) contentment, measured using contented, fulfilled, and satisfied (Cronbach alpha = .91), 4) tranquility, measured using calm, serene, and tranquil (Cronbach alpha = .81), and 5) interest, measured using interested, curious, and fascinated (Cronbach alpha=.79). Several other negative emotion terms adopted from the Brief Mood Introspection Scale (BMIS; Mayer & Gaschke, 1988) such as tired, gloomy, and sad, were also included to provide assessment of general level of negative emotions (Cronbach alpha = .93). Although we expected ESE to correlate to some extent with dispositional positive emotion, we included this measure in part to show that ESE is not simply a byproduct of high levels of a specific type of dispositional positive affect, like general contentment, but an important affective outcome in its own right. This perspective would be supported by a positive but not large correlation between ESE and general contentment, for example. We also wanted to explore ESE's relationship to general negative affect.

3. Satisfaction with life

The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was developed to assess the cognitive/judgmental component of overall well-being. The SWLS is a 5-item, unidimensional scale with good internal reliability that assesses how happy and satisfied one is with the conditions of one's life. Sample item:

"In most ways my life is close to ideal." As with past work (Giesler, 2011), we expected ESE to correlate with SWLS, as experiencing episodes of ESE should promote life satisfaction. In the current sample, Cronbach's alpha = .95.

4. Dispositional Mindfulness

The trait Mindful Attention Awareness Scale (MAAS; Ryan & Brown, 2003) is a 15-item scale designed to assess a core characteristic of mindfulness, namely, a receptive state of mind in which attention, informed by a sensitive awareness of what is occurring in the present, simply observes what is taking place. Internal consistency levels (Cronbach's alphas) generally range from .80 to .90. The MAAS has demonstrated high test-retest reliability, discriminant and convergent validity, known-groups validity, and criterion validity. Five items were adopted from the full scale, responded to on a Likert-type scale running from 'almost always' to 'almost never.' Sample item: "I tend not to notice feelings of physical tension or discomfort until they really grab my attention." In prior investigations (Giesler, et al., 2011) ESE did not correlate with the MAAS, suggesting that ESE is different from mindfulness. In the current sample, Cronbach's alpha = .73.

5. Absorption

The Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974) is a 34-item scale intended to measure absorption, which is a disposition or personality trait in which a person becomes absorbed in their mental imagery. Respondents are asked to respond using 'true' or 'false' to a series of statements. Psychometric evaluation indicates the scale is unidimensional, with coefficient alphas frequently in the high .80s (e.g., see Wild, Kuiken, & Schopflocher, 1995). Five items were adopted from the full scale and

used in the current investigation. Sample item: “While watching a movie, a TV show, or a play, I may become so involved that I may forget about myself and my surroundings and experience the story as if it were real and as if I were taking part in it.” We expected that individuals higher on this trait would likely report more or deeper ESE. In the current sample, Cronbach’s alpha = .91.

6. Mental Health

Because the focus of the thesis was on physical health, we included few items directly tapping psychological well-being. However, because ESE has been linked to better mental health in the past, we included a single-item measure of mental health: “In general, how would you rate your mental health?” Participants responded using 11-point Likert type scale anchored by ‘worst possible’ and ‘perfect.’

RESULTS

Preliminary Analyses

To determine whether ESE is related to physical health, several physical health self-report measures were used in the survey. Preliminary data analyses indicated that five of these tended to correlate relatively highly with one another. These were: 1) the symptom measure that counts the number of acute symptoms (e.g., runny nose) experienced during the past two weeks, 2) the comorbidity measure that counts the number of chronic diseases/conditions experienced by a participant, 3) the single item measure assessing how often physical health restricts activities, 4) a single item measure of typical pain level and 5) a single item measure of global health using a 5-point scale anchored by poor and excellent. Scores from each measure were standardized and averaged together to form a composite summary measure of physical health (Cronbach’s

alpha = .82). Oddly, although the single item measure of health using the 1-100 slider correlated with the composite measure ($r = .58$, $p < .0005$), incorporating it into the composite measure significantly lowered the Cronbach's alpha, suggesting it should be kept separate. Thus, analyses were conducted on two measures of physical health: the composite measure and the single item measure.

To assess ESE, in addition to the traditional item assessing how often participants experience ESE, the new item asking respondents to report how 'deep' the feeling of tranquility/contentment was when ESE was experienced was also administered. These two measures correlated ($r = .27$, $p < .0005$), but not highly, suggesting they should not be combined. Thus, analyses were conducted on two measures of ESE: the frequency measure and the deepness measure.

Most participants did seem to experience ESE. Although 19.9% reported never or not sure, 22.5% had experienced ESE once or twice, 30.2% experienced ESE a few times, 14.6% reported more than a few times, 10.8% reported often, and close to 2% reported very often or most every day. Of those reporting at least one episode, 6.7% of participants rated their deepness as 'just a bit more relaxed than normal,' which anchored the low end of the scale. On the 1 to 7-point scale, the most commonly reported measure of deepness was '5,' with 27.2% of participants experiencing this deepness. Finally, 16% of participants responded feeling 'completely and fully at ease mentally and physically,' which anchored the high end of the scale.

Primary Analyses

The thesis' first primary question was whether ESE predicted physical health. Unfortunately, ESE frequency did not correlate with the single item health measure ($r =$

.04, p = .44) or the composite physical health measure (r = -.07, p = .20). However, ESE deepness did correlate with the single item measure (r = .15, p = .01), but not the composite measure (r= .04, p = .54). This solitary finding was unexpected, but it is similar in magnitude to associations found in the past (Giesler et al., 2011).

The thesis' second primary question was whether specific aspects of ESE are better predictors of health than others. Identifying which aspects of ESE correlate more versus less with health may provide insight into how ESE might exert its possible effects. To this end, a variety of items in the survey assessing different aspects of ESE were included, as described earlier (see Appendix for items). To investigate this, we first examined univariate relationships between each aspect/predictor and the single item, 1-100 slide measure of health in participants who reported having experienced at least one episode of ESE (N = 271). (We focused on the single item measure because that was the only health measure that showed a relationship with ESE).

The following predictors were correlated with health at the $p < .05$ level: the amount of serenity, joy, awe, and love experienced during a typical ESE episode, the extent to which participants could recall concrete details during the episode, and how happy the participant was during the time directly preceding the episode. These variables were used as predictors in a simultaneous multiple regression model, with single item health as the outcome. Although the resulting regression model was significant, R^2 = .10, $p < .0005$, only serenity experienced during the episode (β = .21, p = .02) and amount of happiness prior to the episode (β = .24, $p < .0005$) remained significant. Although it is not entirely clear how to interpret these findings, the fact that these two were significant suggests that: 1) experiencing serenity during ESE, specifically, is one of the key ways

ESE may affect health and 2) being happier prior to an episode may somehow intensify the impact of the episode on health (but not through heightened serenity). We also conducted an exploratory regression analysis using the composite health variable as the outcome; the only significant predictor was amount of happiness prior to the episode (β = .28, $p < .0005$), which further reinforces the role happiness leading up to an ESE episode may play.

Secondary Analyses

We also examined correlations between the two measures of ESE (frequency and deepness) and several other constructs, expecting that the resulting pattern of associations would provide more convergent and divergent evidence for the validity of our ESE measures. As a reminder, the other measures assessed intrinsic religiosity, five types of trait-level positive emotions, general negative affect, satisfaction with life, mindfulness, absorption, and mental health. Both measures of ESE correlated positively but weakly with intrinsic religiosity, the five types of trait-level positive emotions, satisfaction with life, and absorption (*r*s ranged from .12 to .34, $p < .05$). ESE deepness, but not ESE frequency, also correlated with mental health, $r = .16$, $p = .01$. These significant but relatively small correlations are generally consistent with prior work (Giesler et al., 2011), suggesting that our measures of ESE were functioning appropriately in the current sample.

Also similar to past work (Giesler, et al., 2011), neither ESE measure correlated significantly with mindfulness or negative affect (*r*s = -.09 to .05), again providing evidence that the ESE measures were probably producing relatively valid assessments in the current investigation. With respect to negative affectivity, although ESE might be

expected to correlate negatively with negative emotions, negative and positive affect are independent (Diener & Emmons, 1984). This may mean that even people who are experiencing a lot of negative emotions, like someone who is depressed, may still be able to experience ESE.

DISCUSSION

The goal of this study was to increase knowledge about ESE, specifically with respect to how it relates to physical health. The first main question we attempted to answer was whether ESE is a predictor of physical health. Second, we attempted to identify whether certain aspects of ESE were better predictors of physical health than others. Because ESE is a rather novel construct, it has yet to receive much attention from researchers. Although several findings from the current investigation were not in line with our expectations, particularly the lack of association between ESE frequency and physical health, most of our aims were at least partially accomplished. The results not only provide greater insight into ESE, but point the way towards future work.

With respect to our first aim, only one of the measures of ESE (i.e., ESE deepness) correlated with only one of the physical health measures. Although this does provide some support for the relationship, the lack of association between ESE frequency and physical health, in particular, was unexpected. The two may be unrelated, but multiple studies conducted by our lab have consistently shown small but significant associations in different groups, including college students and in older adults in a retirement community. Although the ESE deepness measure was new, the pattern of correlations between both ESE measures and other variables like mindfulness, satisfaction with life, etc., was very similar to the patterns found in prior work, suggesting

the ESE measures were functioning appropriately. Our measures of health may have been problematic. In the past, our studies have been able to use health measures tailored for specific populations, like college students or older aged adults. However, because we were collecting data from MTurk participants, who varied considerably in age (range 18 to 67) and likely, health status, we may not have selected measures that were as comprehensive as they could have been. They may not have provided valid assessments of health across all age ranges.

With respect to our second aim, identifying which aspects of ESE correlate with health, we found that the amount of serenity experienced during ESE, as opposed to other types of positive emotions, was significantly associated with health. In some ways this is not surprising, as serenity tends to be the primary emotion experienced during an episode of ESE. Serenity can be equated with the state of calmness/tranquility/peacefulness. By this definition, serenity corresponds to our measurement of ESE deepness. The ESE deepness item reported how deep feelings of tranquility were during an episode of ESE, thus it is not surprising that ESE deepness ended up being the measure of ESE that correlated with physical health.

If serenity is serving an 'active ingredient' in the ESE-health relation, how might it be doing so? One way could be that feeling more or deeper serenity during episodes of ESE might lead one to experience more serenity in life in general, which could be beneficial in numerous ways. However, the correlations between general, dispositional tranquility, as assessed by the Emotions Scale (Berenbaum et al., 2016) and ESE were significant but small, suggesting that ESE probably does not promote general serenity in a powerful way (or vice versa). It could be that a powerful episode of serenity has short-

term physiological impacts that undo or buffer the effects of stress. Studies have shown that positive affect in general has this effect (e.g., Blevins et al., 2017), so it is possible that serenity, in particular, might have a similar impact. More generally, previous research has also shown that the more positive emotions experienced in life can lead to a healthier lifestyle (Fredrickson & Losada, 2005; Moskowitz, 2003; Petit et al., 2001). So, serenity might possibly be affecting health through that route, although any affect through this route may be small. Longitudinal studies will be needed to identify the specific routes by which ESE might affect health.

The other characteristic/aspect of ESE that predicted health independent of level of serenity during an episode was how happy one was during the time leading up to the actual ESE episode. It could be that being very happy prior to the episode somehow intensifies the beneficial effect of ESE, although one would expect that if happiness were going to intensify the impact of ESE, it would do so by deepening the experience of serenity. This was not the case, so perhaps this finding merely reflects the fact that those who experience happier emotions in general tend to be healthier. This is indirectly supported in our sample. Although we did not report these correlations in the Results, physical health tended to correlate with general levels of positive affect fairly highly, with most correlations between .40 and .50.

Some findings worth noting concern how ESE correlated with some of the other measures we included in order to provide convergent/divergent validity for ESE. One of these correlational analyses revealed that ESE was correlated with absorption but not with mindfulness. The positive correlation with absorption, the tendency to become focused on one's inner experiences, makes sense in that once an episode of ESE is

triggered, a person high on the trait of absorption will probably notice feelings of peace and serenity and become focused on them, thus intensifying their effects. Although mindfulness should also cause individuals to be more aware of their internal feelings as well, being mindful also means being non-reactive to one's internal states, letting them come and go without focusing upon them. So, individuals who are high on the trait of mindfulness may not necessarily be more likely to experience significant ESE. Alternatively, absorption may increase ESE because individuals become absorbed in their surroundings, like when they are taking a walk through nature or at a place of worship, two places in which ESE often occurs. Becoming absorbed in a surrounding that is serene or beautiful should help trigger ESE.

Another interesting result that was encountered was the relationship between ESE and mental health. In the current study, there was only a single item measuring mental health; respondents were simply asked to rate their mental health using a Likert type scale. We hypothesized that mental health would correlate with both measures of ESE. However, the results indicated that mental health correlated only with ESE deepness. This indicates that the more deeply respondents experienced feelings of tranquility and serenity, the better they rated their mental health. This finding suggests that future investigations should also focus on the mental health aspects of ESE. Ideally, such investigations should be longitudinal, which would provide much needed insight into whether ESE promotes better health or is a result of having better health.

Although not as strong as expected, the overall pattern of findings suggests that ESE and physical health are associated. If ESE does indeed foster physical health, our findings suggest that how deeply serenity is experienced during ESE may serve as the

‘active ingredient’ in the ESE-health relationship. The findings of the current investigation support the validity of ESE but suggest that in the future, investigations should use more comprehensive health assessments, examine both physical and psychological aspects of health, and prospectively examine associations between ESE and health.

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APPENDIX

List of questions about aspects/characteristics of ESE

- When you experience such moments of inner peace, how ‘deep’ a sense of contentment/serenity/tranquility do you typically experience?
- When you experience such moments of inner peace, how long do they usually last?
- On a scale ranging from very easy to very difficult, how easy is it to remember concrete details about where you were/what you were doing when you had this experience?
- On a scale of ranging from very easy to very difficult, how easy is it to bring back/re-experience the emotions and feelings you felt at the time of the experience?
- Do you feel like you could cause yourself to ‘relive’ the moment if you wanted to?
- Did the experience gradually begin/develop or was there a definitive beginning?
- Did the experience gradually ‘wind down’ or was there a definitive ending?
- To what extent did you feel ‘outside of yourself’, as if you were observing yourself from outside your body?
- Did you experience this moment during or after physical activity/exertion?
- Did you experience this moment during or after sexual activity?
- Did you experience this moment during or after use of alcohol or other recreational drugs?

- Did you experience this moment shortly after you experienced something really exciting?
- How happy were you during the time leading up to this experience?
- How did time seem to pass during this experience?
- During this experience, how aware were you of… your thoughts? Your feelings?
- Were you trying to have this experience or did it ‘just happen’?
- During the experience, did you have more of a feeling of connectedness or disconnectedness?