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Sharing positive experiences boosts resilient thinking: Everyday benefits of social connection and positive emotion in a community sample

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Abstract

The influence of shared enjoyment and positive affect (PA) on resilient thinking was examined in 191 middle-aged adults (40–65 years), participating in a study of resilience. Participants completed diaries assessing positive events, shared enjoyment, PA, and resilient cognitions (RC). Multilevel structural equation modeling was utilized to examine when and who engages in RC. Participants reported more RC on days they experienced more positive experiences. This relationship was explained by shared enjoyment and PA. Level-1 proportional reduction of variance (PRV) for shared enjoyment, PA, and RC was 9%, 10%, and 35%, respectively. Individuals reporting more positive experiences trended toward a more resilient mindset; PA accounted for this relationship. Shared enjoyment mediated the relationship between interpersonal events and PA. These findings suggest PA is integral to having a resilient mindset, and shared enjoyment is a potential mechanism that may influence PA. Level-2 PRV for shared enjoyment, PA, and RC was 22%, 21%, and 55%, respectively. RC were associated with less depression and anxiety; and greater wellbeing, vitality, and physical functioning at follow-up.

Considerable research attention has been given to how supportive others influence the management of stressful, negative events (Holahan & Moos, 1981; Thoits, 1995). Less attention has been given to how social support and positive interactions with others can have beneficial effects on one's physical and mental health (Ong, Bergeman, Bisconti, & Wallace, 2006), and the health of a community (Arewasikporn, Davis, & Zautra, 2013). Sharing of positive news (i.e., capitalization)—one specific type of shared positive experience—has been associated with subsequent increases in positive affect (i.e., positive emotional states) and subjective well-being (Gable, Reis, Impett, & Asher, 2004); greater vitality (Gable & Reis, 2010); self-esteem and job satisfaction (Illies, Kenney, & Scott, 2011); less loneliness, and more happiness and life satisfaction (Lambert et al., 2013). There is significant evidence that sharing positive experiences is associated with positive outcomes like well-being and

life satisfaction, but whether shared positive experiences are associated with resilient outcomes is not known.

We conceptualize resilience as a compensatory process that occurs in response to a stressor (Sturgeon & Zautra, 2010). In this model, resilience resources (e.g., trait positive affect) inform resilience mechanisms (e.g., state positive affect), and sources of vulnerability (e.g., neuroticism) inform vulnerability mechanisms (e.g., negative social interactions) in parallel. Resilience and vulnerability mechanisms together inform one's coping response. An adaptive response or resilient outcome may be evidenced by swift recovery, sustainability of meaningful pursuits, and growth stemming from adversity (Arewasikporn et al., 2013).

The tendency to share positive experiences with others may represent a resilience resource that promotes positive function and compensates for the adverse influence of stressors on resilient outcomes. Greater sharing of positive experiences has been associated with a greater capacity to respond flexibly to situational demands in response to stressors (Tugade & Frederickson, 2004), and receiving favorable responses from the person with whom experiences are shared has been associated with better perceived support during stressful times (Gable, Gosnell, Maisel, & Strachman, 2012). Additionally, sharing experiences may facilitate better emotional recovery (Nils & Rimé, 2012) and a greater search for meaning and understanding, prompting more growth and learning from negative experiences (Finkenauser & Rimé, 1998). Taken together, these findings support the hypothesized compensatory function of sharing positive experiences, which appear to facilitate adaptive coping processes that in turn, assert beneficial effects on resilient outcomes, compensating for the negative influence of stress on outcomes (Fergus & Zimmerman, 2005).

State-level relationships between shared positive experiences and resilient outcomes are not fully understood, however positive emotion appears to play key mechanistic role. Daily/momentary assessment and experimental studies have demonstrated that positive events result in positive emotion and shared positive experiences, and those shared positive experiences then elicit additional positive emotion (e.g., Ong et al., 2006; Reis et al., 2010), beyond that which is derived from the positive events alone (Langston, 1994). This notion is supported by research that shows sharing pleasant experiences with others is associated with higher ratings of pleasantness (Boothby, Clark, & Bargh, 2014). Capitalization is thought to prolong the duration of positive emotion by extending the positive event experience (Verduyn, Van Mechelen, & Tuerlinckx, 2011), allowing the benefits of positive emotion to develop further, ultimately culminating in mental health benefits. Support for a compensatory role of shared positive experiences on resilient outcomes, though promising, remains limited and restricted to an examination of between-person differences. Examination of day-to-day variations in these phenomena would allow us to examine the potential mechanisms underlying these associations.

The purpose of this study was to explore how sharing enjoyment of daily positive events (e.g., going to a party/social gathering, having lunch with friends, receiving a compliment or gift, celebrating special events or work/educational achievement) may be associated with benefits in mental health, well-being, and resilient outcomes at both state and trait levels in adults at mid-life. Our first aim explored potential resilience mechanisms at the state level.

We tested whether sharing enjoyment about the most positive event of the day—a specific type of shared emotional experience—was associated with same-day resilient cognitions (appraisals of one’s own resilience). We hypothesized that the number of positive interpersonal events (discrete, positive interactions with another person) on a given day would be positively associated with how much participants experienced same-day shared enjoyment of the positive event, and shared enjoyment of the positive event would be associated with more resilient cognitions directly and through positive affect. We proposed that positive affect would account for the relationship between shared enjoyment and resilient cognitions. Our second aim tested the same relationships at the trait level. We asked if people who tended to share their positive experiences had a more resilient mindset (trait-level tendency to evidence resilient cognitions). We anticipated that people who experienced more positive events on average would be more likely to share these experiences with others. Individuals who tended to share these experiences would report more trait positive affect and trait resilient cognitions. Like the within-person model, we hypothesized that trait positive affect would mediate the relationship between trait shared enjoyment and trait resilient cognitions. Our final aim was to explore how much trait-level resilient cognitions were associated with resilient outcomes, well-being, psychological distress, and physical functioning at a later time. Consistent with a compensatory model of resilience, we hypothesized that trait-level resilient cognitions would be associated with resilient outcomes, less distress (depression, anxiety symptoms), and greater well-being, vitality, and physical functioning at follow-up.

Method

Participants and Procedures

This study utilized data collected from a larger sample of 809 middle-aged adults residing in Maricopa County, Arizona in community-based study of resilience in mid-life. Purposive sampling strategy (Shadish, 2002) was used to select communities in identified census tracts with demographic characteristics reflective of the racial and economic composition of the region. To be eligible for the study, participants had to be: (1) 40 to 65 years of age, (2) fluent in English or Spanish, and (3) reside in the identified census tracts. Participants were recruited via mailings sent to addresses located in the selected census tracts. Research assistants screened participants for eligibility, obtained written informed consent, and compensated participants \$5 for their informed consent. One quarter of the 809 participants enrolled in the parent study ($n = 201$) was randomly selected to complete the daily diary portion of the study. Participants were trained to use a tablet computer to complete nightly diaries for 30 consecutive days. Research assistants traveled to a participant’s home to replace malfunctioning equipment if problems occurred with the tablet. Entry dates were verified using built-in date-checking software to prevent entries from previous days from being retrospectively entered. After the diary period participants were debriefed, compensated \$3 for each completed entry (up to \$90 total), and their data were downloaded for analysis at the end of the study. During the course of the study, an additional follow-up phone assessment was added to study protocols to provide a longer-term assessment of function. As such, the duration of time between daily diaries completion and follow-up phone interview initiation was variable for participants who had completed the study

protocols. Participants were contacted a minimum of six months later by research assistants for a follow-up telephone interview to evaluate perceived stress, psychological distress, subjective well-being, and physical functioning in the prior six months. Research assistants interviewed participants by phone and entered participant responses into a secure, web-based survey. Participants were compensated \$30 upon completion of the phone interview and their data were downloaded for analysis. Time between completion of the daily diaries and follow-up assessment ranged from six months to three years, 10 months ($M = 16$ months). The majority of participants (50%) completed the follow-up assessment within one year of their diaries. All study procedures were approved by the Arizona State University Institutional Review Board.

Measures

Demographic characteristics.—Participants self-reported their sex, age, race, ethnicity, marital status, employment status, annual household income, and educational attainment.

Diary measures.

Shared enjoyment.: Participants were asked to think about the most positive event of the day, and through a single item asked to rate, “How much did others share your enjoyment of the experience?” on a scale ranging from 1, “not at all” to 5, “greatly.”

Resilient cognitions.: Participants were given a list of statements and asked how much they agreed with the statements on a scale ranging from 1, “not at all,” to 5, “very much.” Items were chosen based on their correspondence with existing models of adult resilience (e.g., emphasizing effective recovery, sustained positive functioning, personal growth, and effective coping with stress). Two items from the State Hope scale (Synder et al., 1996) and eight items selected with modification for the time frame used in daily diaries from existing scales (Brief Resilience Scale, Smith et al., 2008; Ego Resilience Scale, Block & Kremen, 1996; Resilience Scale, Wagnild & Young, 1993) were used to create a composite representing cognitions relevant to broadened cognitive scope and resilience (see Table 1 for item content). Multilevel confirmatory factor analysis was used to confirm that a one-factor model adequately represented the factor structure underlying the 10 items, with 2 of 3 fit indices demonstrating good model fit, $\chi^2(70) = 788.84$, $p < .001$, RMSEA = .045, TLI = .862, SRMR_{WITHIN} = .043, SRMR_{BETWEEN} = .048, CFI = .892, and all items loading greater than 0.75. Additional information about this measure (inter-item correlations, factor loadings) can be found in Appendix A. The scale composite was computed by taking the mean of the 10 items. The internal consistency of this resilient cognitions scale was excellent ($\alpha = 0.92$).

Positive affect.: The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was used to measure positive affect. Participants were given a list of 10 positive mood adjectives (e.g., “excited,” “happy,” “calm,”) and asked to how much they had experienced each mood that day on a scale ranging from 1, “very slightly/not at all” to 5, “extremely.” The internal consistency of the scale was excellent ($\alpha = 0.95$). The PANAS was validated for use in non-clinical samples (Watson et al., 1988; Crawford & Henry, 2004).

Positive interpersonal events.: A subscale of the abridged version of the Inventory of Small Life Events (ISLE; Zautra, Guarnaccia, & Dohrenwend, 1986) was used to assess daily positive interpersonal events (Zautra, Reich, & Guarnaccia, 1990). This scale has been used in prior studies (e.g., Zautra et al., 1999; Zautra & Smith, 2001) and validated for use in adults (Zautra et al, 1990). A sum of the daily occurrences of positive interpersonal events with a spouse (7 items), friends (8 items), family (11 items), and co-workers (6 items) was computed. Example items include: “received a compliment from a friend,” “celebrated with spouse/partner,” and “successfully completed work on a major task/project.” Since the scale was constructed to record the number of distinct events, the items were written to be non-overlapping, making internal consistency reliability an inappropriate statistic to evaluate reliability. Test-retest reliability was assessed by examining the correlation of positive event scores obtained on adjacent days, yielding a day-to-day correlation of 0.51.

Follow-up measures.—Participants were asked to report the frequency with which they had feelings of depression, anxiety, well-being, and vitality in the last four weeks on a scale ranging from 1, “none of the time” to 6, “all of the time.”

Depressive symptoms.: The four-item Mental Health Inventory (MHI) Depression subscale (Veit & Ware, 1983) was used to assess depressive symptom severity. For example, participants were asked, “How much time in the past four weeks have you been in low or very low spirits?” The internal consistency of this scale was excellent ($\alpha = 0.91$). This subscale was validated for use in the general population (Veit & Ware, 1983).

Anxiety symptoms.: Three of the highest loading items from the initial MHI Anxiety subscale validation study (Veit & Ware, 1983) were selected to assess frequency of anxiety symptoms. A composite was created by taking the sum of the three items. The following is a sample item: “How much time in the past four weeks have you been anxious or worried?” The internal consistency of this scale was high ($\alpha = 0.88$).

Well-being.: The World Health Organization-5 Well-being Index (WHO-5; Bonsignore, Barkow, Jessen, & Heun, 2001) is a five-item scale that measures subjective well-being. For instance, participants were asked how much they “felt daily life has been filled with things that interest you,” “woke up fresh and rested,” and “felt active and vigorous.” Internal consistency of this scale was excellent ($\alpha = 0.91$). The WHO-5 has been validated in many populations, including adults in mid-life (Topp, Østergaard, Søndergaard, & Bech, 2015).

Vitality.: The four-item SF-36 vitality subscale (Ware & Sherbourne, 1992) was used to assess vitality. Participants were asked to rate how much they felt “full of life,” for example. The internal consistency of this scale was very good ($\alpha = 0.85$). The SF-36 subscales were validated for use in the general population (McHorney, Ware, & Raczek, 1993).

Physical functioning.: Physical functioning was measured with the SF-36 physical functioning subscale (Ware and Sherbourne, 1992). Participants were given a list of common physical activities (e.g., climbing several flights of stairs) and asked whether their health limited these activities “a lot,” “a little,” or “not at all,” in the past four weeks. Internal

consistency of this scale was excellent ($\alpha = 0.92$). This subscale was validated for use in the general population (McHorney et al., 1993).

Adaptation to stress. Participants were asked about their ability to adapt to stressful changes across work, spousal relations, family, neighborhood, finances, friends, physical and emotional health domains. They were asked, "...have you been able to successfully adapt to stressful changes in your [domain] over the past 6 months?" on a scale ranging from 1, "not at all" to 5, "very much." Responses across domains were averaged to create a summary of overall adaptation to stress in the past six months.

Most stressful event items. Participants were asked to consider the most stressful event that occurred in the past six months in a structured interview format with probes to assist with recall. Such methods for assessing life stress have demonstrated good reliability, with accurate reports of up to ten years for severe life events (Monroe, 2008).

Coping difficulty. Participants were asked with a single item, "How difficult was it to cope with this experience?" on a scale ranging from 1, "not at all" to 5, "very much."

Recovery. Recovery from the stressful event was assessed with a single item that asked how much the participant "[had] recovered from the experience and resolved problems that arose as a result" on a scale ranging from 1, "not recovered at all" to 5, "fully recovered."

Sustainability. Sustainability of meaningful activities was measured with a single item that asked how much the participant was "able to continue to pursue interests, goals, and purpose (activities that give life meaning)" during the stressful experience on a scale ranging from 1, "not able to continue at all" to 5, "fully able to continue."

Growth. Post-event growth was measured with a single item that asked how much the participant was "able to learn from and grow stronger from the experience" on a scale ranging from 1, "not at all" to 5, "extremely."

Data analytic strategy

First, we computed descriptive statistics to describe the sample and ensure the assumptions (e.g., normality) required for the planned analyses were met. For aims 1 and 2, daily diary data were analyzed using multilevel structural equation modeling (MSEM) with the TYPE=TWOLEVEL RANDOM command in Mplus (Muthén & Muthén, 2012). Maximum likelihood with robust standard errors (MLR), also known as full information maximum likelihood (FIML; Heck & Thomas, 2015), was used to estimate parameters and address missing data. This procedure utilizes all observations—in contrast to using observations from participants with complete data—reducing undue bias due to listwise deletion. FIML can be appropriately utilized in multilevel and structural equation modeling to account for data missing completely at random and at random (e.g., as in the case of positive interpersonal events measure, in which responses are dependent on participants' contact with friends, family members, spouse, and coworkers; Little, Jorgensen, Lang, & Moore, 2014). Using MSEM allowed for separate modeling of statistical relationships at the person and daily levels of analysis by constructing from observed data separate latent models from

level-1 (daily-level) and level-2 (person-level) variance (Preacher, Zyphur, & Zhang, 2010), while accounting for clustering of the data (Muthén & Muthén, 2012). This approach was preferable to linear regression, which does not account for non-independence of observations, and multilevel modeling, which cannot estimate a structural path model (Preacher, Zyphur, & Zhang, 2010). All variables in the analysis demonstrated sufficient intraclass correlations (positive interpersonal events: 0.42; shared enjoyment: 0.31; positive affect: 0.67; resilient cognitions: 0.69), which are required for MSEM. The analysis ($n = 192$) was thought to be adequately powered, as a sample size of approximately 200 clusters (individuals) with a relatively larger cluster size ($M = 26$ observations) is adequate to detect effects in MSEM with MLR estimation (Hox, Maas, & Brinkhuis, 2010). Potentially confounding demographic variables were identified with T -tests and analysis of variance. Gender (on shared enjoyment), marital status and age (on positive affect) were entered as covariates, however their inclusion did not impact the pattern of results appreciably, so they were removed from the final analysis. Since the length of time between the main study and follow-up interviews varied, it was treated as a covariate in the analyses. To test whether bias was introduced as a consequence of asking about events when follow-up interviews were more proximal to the diary period relative to those that were more distal, we evaluated differences in follow-up outcomes between participants with proximal interviews (below the median time between assessments) versus distal interviews (above the median) with t -tests. We did not find significant differences between the two groups, and thus concluded that there was not significant evidence of bias in this respect. Mediation analyses tested the indirect effects of positive interpersonal events on resilient cognitions through shared enjoyment and positive affect at daily (level-1) and person (level-2) levels. Exogenous variables in the level-1 models were centered using individual cluster means (mean scores for each participant), and exogenous variables in level-2 models were centered using the grand mean. Mediating (indirect) effects were calculated by using the ab product of the coefficients; the a path refers to the relationship between predictor (positive interpersonal events) and mediator (shared enjoyment, positive affect), and the b path refers to the relationship between mediator and criterion (resilient cognitions). Temporal precedence, one of the inferences of mediation, could not be demonstrated in the models because the data were cross-sectional. Thus, it may be more appropriate to refer to the mediators as “intervening variables” (Mackinnon, Lockwood, Hoffman, & West, 2002). We employ the term “mediation” here to refer to the analytic approach of estimating how much an intervening variable accounts for the relationship between predictor and criterion. As a confirmatory step, RMediation (Tofighi & Mackinnon, 2011) was used to compute asymmetric confidence limits that accounted for correlations between the a and b paths, as these correlations can cause bias in multilevel mediation models (Kenny, Bolger, & Korchmaros, 2003). Measures of model fit were not applicable, as the model was fully saturated. Proportional reduction of variance (PRV) statistics were computed as effect size measures (Raudenbush & Bryk, 2002) to capture the proportion of variance that was accounted for by each variable by level of analysis. PRVs were calculated by subtracting residual variance of a variable in the full model from total variance of the variable in the null model, then dividing the difference by the null model variance. Effect size (r^2) values of .01, .09, and .25 represented small, medium, and large effect sizes respectively (Cohen, 1988). For aim 3 and to assess the predictive validity of the Resilient Cognitions Scale,

partial correlations were computed between an individual's average level of resilient cognitions (level-2), and depression, anxiety, well-being, vitality, and physical functioning at follow-up.

Results

Participant Enrollment and Baseline Characteristics

Of the 201 participants randomized to participate in the current study, 192 participants provided data for the daily diaries, for a 96% response rate. On average, participants completed 26 of 30 diaries, at an 87% completion rate. Participants with missing diary data did not differ from participants with complete or partial diary data, except for participants with some missing diary data reported higher average positive affect across the daily diary period ($r(190) = .15, p = .04$). Of the 192 participants who completed daily diaries, 79% completed a follow-up phone interview ($n = 151$), a rate comparable to that of the full sample. Participants with missing follow-up data tended to report less education ($r(188) = -.15, p = .046$) and anxiety at follow-up ($r(149) = -.18, p = .03$), but were otherwise equivalent to those with less missing follow-up data.

The sample was comprised of 102 women and 89 men, and had a mean age of 53.51 ($SD = 7.41$). Ninety-nine participants were married, 88 were not, and 4 did not provide marital status data. At the time of data collection, 121 participants were employed, 64 were not, and 6 did not provide their employment status. Median household income and level of education were \$50,000 to \$65,000 and completion of a college degree, respectively. Participants were able to self-report more than one race/ethnicity: the majority of the sample was Caucasian (72%; 3% Black/African-American, 3% Asian, 2% American Indian/Native American, 12% more than 1 race), non-Hispanic (85%; 15% Hispanic). Nine percent did not report their race/ethnicity.

Mean (SD) values for positive interpersonal events, shared enjoyment, positive affect, and resilient cognitions were 4.74 (3.24), 3.56 (1.33), 3.09 (0.97), and 3.29 (0.84), respectively (see Appendix A for zero-order correlations). The proportion of level-1 (within-person) variance was greater than the proportion of level-2 (between-person) variance for shared enjoyment (69% and 31% respectively) and positive interpersonal events (58% and 42% respectively). The proportion of level-2 variance was greater than the proportion of level-1 variance for positive affect (67% to 33% respectively) and resilient cognitions (69% and 31% respectively).

Daily Diary Analyses

Within-person mediation path models.—Parameter estimates for the state-level model are presented in Table 2 and Figure 1a. On days when a greater number of positive interpersonal events than usual was experienced, individuals reported having more resilient cognitions ($c_{W1}' = 0.018, p < .001$), more positive affect ($a_{W1} = 0.045, p < .001$), and higher shared enjoyment of their most positive experience with others ($a_{W2} = 0.119, p < .001$). Greater positive affect ($b_{W1} = 0.423, p < .001$) and shared enjoyment ($b_{W2} = 0.028, p < .001$) were independently associated with more same-day resilient cognitions. The

relationship between positive interpersonal events and same-day resilient cognitions was significantly mediated by positive affect ($ab_{W1} = 0.019, p < .001$) and shared enjoyment ($ab_{W2} = 0.003, p < .001$). Furthermore, sharing enjoyment was related to more same-day positive affect ($b_{W3} = 0.074, p < .001$). Sharing enjoyment significantly mediated the relationship between positive interpersonal events and positive affect ($ab_{W3} = 0.009, p < .001$). There was no change in mediated effects when asymmetric confidence intervals were computed, suggesting that the mediating effects were not attributable to correlation between the a and b paths (see Table 2). The model accounted for 9%, 10%, and 35% of the within-person (level-1) variance for shared enjoyment, positive affect, and resilient cognitions respectively, which is suggestive of medium (shared enjoyment, positive affect) and large effect sizes (resilient cognitions).

Between-person mediation path models.—Parameter estimates for the trait-level model are presented in Table 2 and Figure 1b. Individuals reporting more positive interpersonal events on average also reported significantly higher average levels of positive affect ($a_{B1} = 0.097, p = .001$) and greater sharing of enjoyment ($a_{B2} = 0.143, p < .001$). Individuals who generally experienced greater levels of positive affect reported more resilient cognitions on average ($b_{B2} = 0.568, p < .001$), though those who tended to share enjoyment with others more frequently did not ($b_{B1} = 0.072, p = .21$). Direct and indirect effects were found between positive interpersonal events and resilient cognitions ($c_B' = 0.042, p = .05$), with positive affect accounting for a significant degree of the relationship between positive interpersonal events and resilient cognitions ($ab_{B1} = 0.055, p = .003$). Sharing enjoyment did not mediate the relationship between positive interpersonal events and resilient cognitions at level-2 ($ab_{B2} = 0.010, p = .22$). Additionally, participants reporting more frequent sharing of enjoyment also had higher average positive affect over the course of the daily diary period ($b_{W3} = 0.240, p = .002$). Sharing enjoyment also mediated the relationship between the average number of positive interpersonal events per day and average levels of positive affect ($ab_{B3} = 0.034, p = .007$). All mediated effects remained significant after the correlation between a and b path coefficients was taken into account. The model accounted for 22%, 21%, and 55% of the between-person (level-2) variance for shared enjoyment, positive affect, and resilient cognitions respectively, which is suggestive of moderately large (shared enjoyment, positive affect) to large effect sizes (resilient cognitions).

Follow-Up Analyses

Individuals who tended to report more resilient cognitions indicated that they were better able to adapt to overall stress in their life ($r(148) = .24, p = .003$), cope with less difficulty ($r(146) = -.25, p = .002$), recover more swiftly ($r(146) = .18, p = .03$), sustain meaningful activities ($r(146) = .19, p = .03$), and grow and learn from stressful events ($r(146) = .27, p = .001$). Average level of resilient cognitions was also negatively associated with symptoms of depression ($r(148) = -.34, p < .001$) and anxiety ($r(148) = -.30, p < .001$), and positively associated with well-being ($r(148) = .29, p < .001$), vitality ($r(149) = .20, p = .009$), and physical functioning ($r(147) = .16, p = .02$), even after controlling for baseline levels.

Discussion

The purpose of this study was to examine the extent to which day-to-day and individual differences in shared enjoyment independently contributed to a daily, resilient mindset in a community sample of 191 middle-aged adults. As expected, individuals reported more resilient cognitions on days they shared their enjoyment about a positive event with others and experienced positive affect, with positive affect serving as an intervening variable in the relationship between shared enjoyment and resilient cognitions. Also consistent with our hypotheses, individuals reporting more sharing of positive events on average tended to have a more resilient mindset compared to their counterparts who reported less shared enjoyment. Again, positive affect explained a significant degree of the association between shared enjoyment and resilient cognitions on the between-person level. Furthermore, our results provide preliminary evidence that consistent with a compensatory model of resilience, having a resilient mindset is, at best, a promotive factor for future mental health, well-being, and physical functioning; and at minimum, a co-occurring indicator of better adjustment.

To our knowledge, this study is the first to explore the relationship between shared enjoyment and resilient cognitions in a MSEM framework utilizing daily diary methods. The multilevel nature of this analytic approach allowed us to answer questions of *when* individuals reported resilient cognitions, and *who* reported resilient cognitions by partitioning variance into different levels of analysis. For instance, an examination of the relative proportion of within- and between-level variance revealed (1) how much people experienced positive events and shared enjoyment on average varied less from person-to-person, but more from day-to-day; and that (2) positive affect and resilient cognitions vary less on a day-to-day level, and more from person to person. This finding identifies positive interpersonal events and shared enjoyment at the state level as potential areas of intervention. MSEM also allowed us to discover that different relationships between variables existed on different levels, as we describe below.

Our examination of potential resilience mechanisms at the state-level yielded results consistent with our hypotheses and extends the broader literature on resilience and sharing positive experiences with others in several ways. First, this is the first study to explore the preliminary utility of a resilient cognitions measure to assess daily appraisals about one's resilience as a criterion—in contrast to prior studies which have examined shared experiences as predictors of well-being (e.g., Gable et al., 2004)—and examine the relationships between positive interpersonal events, positive affect, shared enjoyment, and resilient cognitions. Second, the mediating effect of shared enjoyment on the relationship between positive interpersonal events and positive affect is consistent with research that suggests shared experiences foster positive affect (Reis et al., 2010). Finally, the findings are strengthened by the demonstration of these factors in daily life as they are captured in a naturalistic setting soon after they are experienced, limiting inaccuracy related to retrospective recall and deliberate manipulation.

The examination of potential trait level resilience resources yielded results that were partially consistent with our hypotheses. Unlike the within-person analysis, resilient cognitions were not directly associated with positive events nor shared enjoyment,

suggesting that having a resilient mindset may be more closely related to having more trait positive affect, which in turn may be informed by one's tendency to experience positive interpersonal events and share enjoyment with others. This finding extends prior research on the well-established relationship between positive affect and trait resilience (e.g., Ong et al., 2006) to include associations between trait positive affect and having a resilient mindset, while emphasizing the importance of social factors in these relationships. The significant direct and indirect effects involving positive interpersonal events and shared enjoyment, and large PRV for resilient cognitions at both state and trait levels suggest that shared experiences may be important facilitators of resilient cognitions, and highlight the contribution of social interaction on resilience.

It should be noted that the frequency of positive interpersonal events was, in part, dependent on contact with family, friends, partners, and coworkers. One might wonder if participants who are non-partnered, non-working, or with limited friend/family contact were not be given the opportunity to respond positively to items in all domains, and that bias might be introduced as a result of differential responding. However, we view this pattern of differential responding not as a source of bias, but rather as an indicator of meaningful differences between respondents in terms of their access to potential sources of positive interpersonal events. The lack of contact in these domains may represent missing sources of potential social engagement that are likely to have implications for mood and cognition.

Another important concern is the conceptual overlap among the positive variable constructs (e.g., positive interpersonal events, positive affect, shared enjoyment, resilient cognitions), and whether these constructs are distinct from one another. The presence of moderate-to-large correlations at the between-person level, modest-to-moderate correlations at the within-person level (see Table A3, Appendix A for correlation table), and r^2 values demonstrating 4–53% overlap in shared variance suggest some, but not complete overlap between measures. Shared enjoyment, positive affect, and positive appraisals are likely to co-occur during positive experiences with others, but may also occur separately and in different contexts. These findings suggest that these constructs may be related but are distinct in our data, and that there may be value in examining these constructs separately, as they may represent different aspects of positive experience. The findings support the preliminary resilient cognitions measure as being distinct from the other positive constructs assessed in this study.

Our findings also support further study of the preliminary resilient cognitions measure, a novel measure that appeared to be associated with resilient outcomes, greater well-being, better physical functioning, and lower distress in this mid-life community sample. This finding suggests that the tendency to have positive cognitions about one's own resilience may represent a resilience resource. The ability to test the relationships of a resilient mindset with subsequent reports of psychosocial health represents a strength of the study. Further validation studies are needed to assess its psychometric utility as a potential contributor to healthy functioning.

The model presented by this study suggests potential entry points for individual and community intervention. Increasing client engagement in positive events (e.g., pleasant

events scheduling; Lewisohn & Graf, 1973) could potentially increase positive affect and resilient cognitions, assuming our hypothesized direction of effects. Positive activity interventions, which often include shared positive experiences through acts of kindness, gratitude expression, and positive feedback in response to capitalization, have been shown to decrease psychosocial distress and increase well-being (Chakhssi, Kraiss, Sommers-Spijkerman, & Bohlmeijer, 2018). A focus on creating opportunities for shared experiences might have particularly helpful emotional benefits for individuals who experience social anxiety or isolation. The benefits of sharing positive experiences might also extend to the community. Community interventions that increase opportunities for positive social interaction have been shown to promote individual and community well-being (Arewasikporn et al., 2013). For example, community gardening interventions bring community members together toward a common goal, facilitating feelings of connectedness and social cohesion (Okvat & Zautra, 2011). Thus, shared positive experiences may have the potential to help form and strengthen social networks, increasing social capital, which in turn is believed to play an important role in the reduction of health disparities, morbidity, and mortality (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997).

Limitations

There are limitations of the current study that should be acknowledged. First, response bias may have influenced the findings. While we mitigated acquiescence bias in our data acquisition procedures, there may be some degree of bias that remains. Second, the potential for a positivity bias in perception of life events, tendency to recall affect associated with positive events longer than affect associated with negative events (Walker, Skowronski, & Thompson, 2003), impression management, and other unidentified confounding factors may have influenced our results. Third, the positive interpersonal event measure may not have captured every potential source of positive interpersonal engagement in daily life; however, the measure included domains thought to be appropriately representative of day-to-day social interactions and, to the best of our knowledge, did not exclude any major life domains. Fourth, the cross-sectional nature of the analyses of the diary data limits inferences about directionality and causality. While our model reflects an assumed temporal ordering of variables based on past research and corroborated by experimental paradigms (e.g., Lambert et al., 2013), we cannot definitively rule out other temporal ordering of the daily measures and bidirectional relationships. For example, a resilient mindset may lend itself to an openness to experience and willingness to interact with other individuals, potentially causing the production of positive social experiences. Nevertheless, our results highlight positive affect and shared enjoyment as important intervening variables in the dynamics of daily socio-affective and cognitive processes. The causal order suggested by our models should be corroborated by experimental studies, in which it may be more feasible to demonstrate temporal precedence and causality. There are also limits to the current study's generalizability. These findings are specific to the sample of middle-aged adults. Age differences in activity engagement (e.g., Zautra, et al., 1991) and mood (Garnefski & Kraaij, 2006; Charles, Reynolds, & Gatz, 2001) suggest that the relationships examined in the present study may differ by age. The individuals in our sample also reported higher educational attainment and household income than average Americans, and the proportion of Caucasian participants (72%) was greater than that of the general US population (61%; US

Census Bureau, 2016). Moreover, the responses given by the participants presumably represent a Western perspective. Furthermore, the experiences of non-responders (who reported lower educational attainment, lower anxiety, and higher positive affect than responders) and individuals who chose not to participate (who tended to reside in predominantly Hispanic, low income neighborhoods) may not be represented in our findings. Lastly, there are important limitations related to measurement. The psychometric basis for the novel and modified measures used in this study would be stronger had they been validated in independent datasets prior to their utilization. The use of single-item measures—even for those with high face validity—can be problematic, as they may be more vulnerable to measurement error and bias in interpretation. For example, the shared enjoyment measure can be understood as the participant sharing enjoyment by telling someone else about the event (i.e., capitalization), or the participant and someone else are simultaneously experiencing the positive event and enjoyment together. Also, this measure may reflect other constructs such as emotional intelligence (e.g., ability to recognize shared experience). This ambiguity, along with other threats to validity (e.g., the use of double- and triple-barreled measures) in addition to those described above represent significant limitations. Perhaps most saliently, the validity of the resilient cognitions measure was in part assessed through its relation with other new measures. Our concern is mitigated to some degree by the similar pattern of association found among the resilient cognitions measure and validated measures (i.e., MHI depression, WHO-5 Well-Being, SF-36 vitality, and physical functioning). Thus, we believe there is sufficient support to suggest our preliminary findings are not spurious.

Future Directions

There are several potential areas of future research. As a first step in examining shared enjoyment in resilient processes we focused on the positive aspects of everyday life. The inclusion of sources of vulnerability (e.g., trait negative affect), and vulnerability mechanisms (e.g., negative events), which may also influence how much people engage and share experiences with others, represents a logical next step in future examinations of resilient cognitions. It will also be important to examine the role of stress in these processes. Social stress plays a significant role in diminishing resilient outcomes and functioning; adaptation under such conditions is contingent on how one reacts to stressors (Ong et al, 2006). Whether the same benefits of shared enjoyment would be found in individuals whose lives are characterized by disrupted relationships (e.g., individuals with depression, anxiety, or chronic health conditions) is not known. Evaluating our model in clinical populations may provide information about socio-emotional deficits and perhaps identify potential targets for intervention. Future studies might also focus on moderators of the relationships examined in the current study. For example, the nature and quality of responses to shared experiences may be influential (Reis et al., 2010). It is likely that some attempts at social sharing could be met with indifference or hostility, which could compromise the emotional value of the positive experience. Our findings suggest that shared enjoyment yielded an overall positive effect on positive mood and resilient cognitions. We nevertheless encourage greater attention to the transactional nature of shared positive experiences in the future, as both immediate responses to shared positive experiences and the strength of relationship overall, may modify the emotional consequences of shared experiences. The examination of individual

differences in demographics, personality, and presence of support from important others (i.e., romantic partners, family members, friends, coworkers) were beyond the scope of the study, but represent potential moderators that ought to be examined in the future. Additionally, our preliminary examination of the resilient cognitions measure yielded valuable information about daily processes of shared enjoyment and positive emotion, suggesting that there is merit in further validation and examination of its utility as a measure of a potentially promotive cognitive process. Our final point concerns our model, which was constructed to test specified hypotheses. We acknowledge that other models that arrange our data differently may exist, and encourage future testing of these models.

Conclusion

The current study examined the associations among shared enjoyment, positive emotion, and resilient cognitions at the state and trait level in a sample of middle-aged adults. Our results highlight the importance of sharing positive experiences in one's daily life, which may have implications for the enhancement of immediate positive emotional states and resilient cognitions, which in turn may have long-term benefits in mental health, well-being, physical function, and resilient outcomes. Our results provide a context for future studies to examine the socio-affective and cognitive contributions of shared positive experiences.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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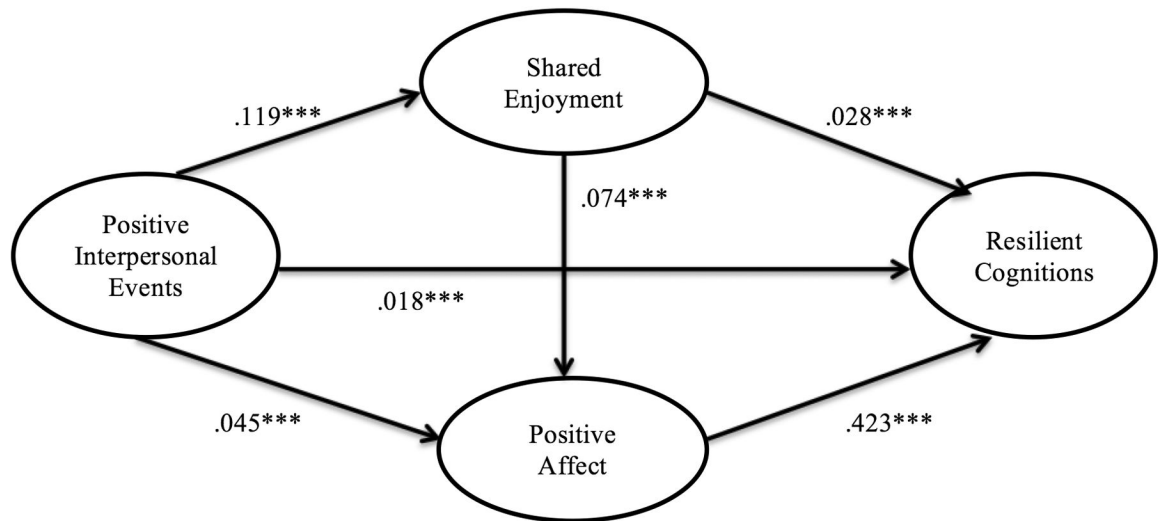


Figure 1a.

Within-person mediation model depicting shared enjoyment and positive affect as intervening variables partially accounting for the association between positive interpersonal events and resilient cognitions. $*p < .05$, $**p < .01$, $***p < .001$

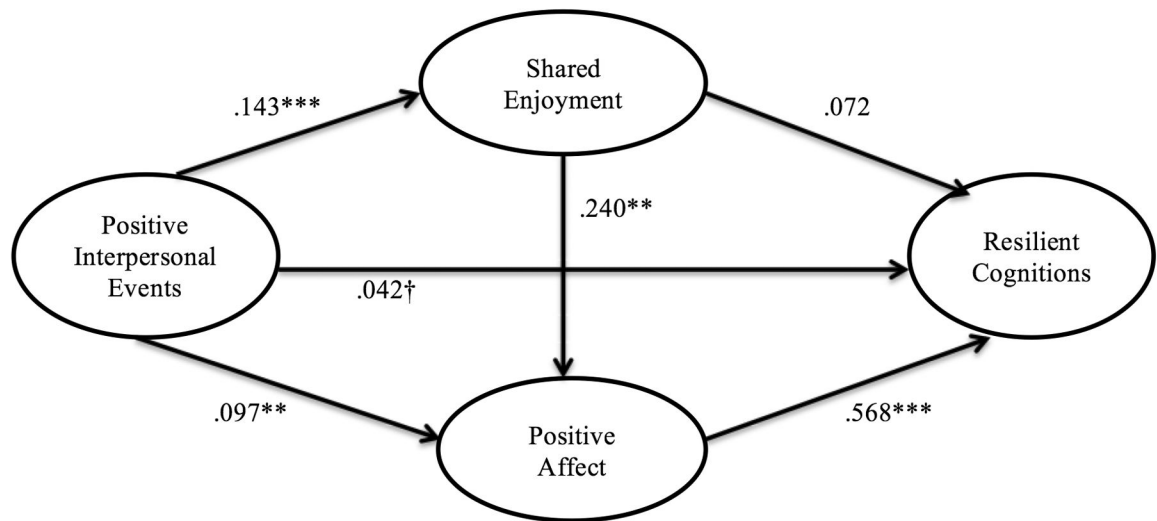


Figure 1b.

Between-person mediation model depicting shared enjoyment and positive affect as intervening variables partially accounting for the association between positive interpersonal events and resilient cognitions. $^{\dagger}p < .10$, $*p < .05$, $**p < .01$, $***p < .001$

Table 1

Resilient Cognitions Scale –Item Content and Descriptive Statistics

Item Content	<i>M</i>	<i>SD</i>
1. I could keep my mind open to new ways of looking at things.	3.53	0.81
2. I felt I could get out of a jam if I had to.	3.27	0.89
3. I could see ways around problems I faced today.	3.28	0.83
4. I felt I could keep perspective.	3.44	0.75
5. I felt able to bounce back from problems.	3.21	0.77
6. I could understand my limitations.	3.31	0.74
7. I felt I could stay engaged with the people I care about.	3.61	0.78
8. I was curious about things.	2.88	0.87
9. I was aware of my feelings.	3.49	0.72
10. I was able to “recharge,” get a second wind.	3.10	0.81

Note. *M* = between-person mean, *SD* = between-person standard deviation.

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Table 2

Within- and Between-Person Mediation Models

Within-Person Mediation Models									
Predictor	Mediator	Criterion	a Path <i>B</i> (SE <i>B</i>)	b Path <i>B</i> (SE <i>B</i>)	ab Path <i>B</i> (SE <i>B</i>)	ab Mediating Effect	Correlation of <i>a</i> and <i>b</i>	LL	UL
PIE	PA	RC	0.045 (0.005)***	0.423 (0.020)***	0.019***	0.044	0.015	0.024	
PIE	Enjoyment	RC	0.119 (0.009)***	0.028 (0.008)***	0.003***	0.011	0.001	0.005	
PIE	Enjoyment	PA	0.119 (0.009)***	0.074 (0.011)***	0.009***	-0.064	0.006	0.012	
Between-Person Mediation Models									
Predictor	Mediator	Criterion	a Path <i>B</i> (SE <i>B</i>)	b Path <i>B</i> (SE <i>B</i>)	ab Path <i>B</i> (SE <i>B</i>)	ab Mediating Effect	Correlation of <i>a</i> and <i>b</i>	LL	UL
PIE	PA	RC	0.097 (0.029)**	0.568 (0.069)***	0.055**	0.151	0.021	0.095	
PIE	Enjoyment	RC	0.143 (0.028)***	0.072 (0.057)	0.010	-0.029	-0.006	0.028	
PIE	Enjoyment	PA	0.143 (0.028)***	0.240 (0.076)**	0.034**	-0.019	0.034	0.062	

Note. Observations based on 191 participants with up to 30 daily diary assessments. RC = resilient cognitions, PA = positive affect, Enjoyment = shared enjoyment, PIE = positive interpersonal events, CI = confidence interval; LL = lower limit, UL = upper limit

* $p < .05$,

** $p < .01$,

*** $p < .001$