Perceiving Control: A Double-Edged Sword in Old Age

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Although control beliefs are thought to be pivotal contributors to emotional well-being in old age, questions remain about the specific and long-term emotional implications of different types of control beliefs. We examined three generalized beliefs about control (personal control over desirable outcomes, personal responsibility for undesirable outcomes, perceived others’ control) and their associations with emotional well-being (positive and negative affect) using cross-sectional (N = 516) and longitudinal (N = 206) samples from the Berlin Aging Study (age range = 70–103 years). Relationships between control beliefs and emotional well-being were dependent on the type of control belief and the dimension of emotional well-being considered, the sample investigated, and on whether individual differences at a given point in time or individual differences in intraindividual changes over time were examined. Despite these complexities, findings suggest that perceived control over desirable outcomes is associated with high emotional well-being, whereas perceived others’ control is an emotional risk factor in old age.

A sense of control has been repeatedly identified as an important factor in successful aging and emotional well-being (e.g., M. M. Baltes & Baltes, 1986; Lachman & Weaver, 1998; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Rodin, 1986). Earlier studies on the emotional implications of perceived control have focused on how perceptions of control relate to negative affect. These studies, primarily based on middle-aged samples, have shown that some beliefs about control are associated with low levels of negative affect, whereas other beliefs (e.g., a belief in powerful others’ control) can be related to high levels of anxiety and depression (e.g., Taylor, Helgeson, Reed, & Skokan, 1991).

The present study extended past research by investigating the associations of perceived control not only to negative affect but also to positive emotions. Furthermore, we examined these relationships in a heterogeneous sample of old and very old individuals (Mage = 85 years) both cross-sectionally and longitudinally. Our conceptualization of perceived control was closely linked to the concept of locus of control proposed by Levenson (1981) and resembled what Skinner (1995) has called a generalized control dimension comprising beliefs about whether agents (self or others) are able to influence desirable and undesirable outcomes. Specifically, we focused on the emotional implications of three dimensions of generalized perceived control: personal control over desirable outcomes, personal responsibility for undesirable outcomes, and others’ control over desirable and undesirable outcomes (see Appendix, Note 1).

Are All Types of Control Beliefs Beneficial for Emotional Well-Being?

Perceived personal control over desirable outcomes is often viewed as a prototype of an adaptive and desirable personality characteristic (e.g., Bandura, 1996; Skinner, 1995). A meta-analysis of 54 studies with young and middle-aged adults revealed an average correlation between this type of control belief and depression of r = −.19 (Sweeney, Anderson, & Bailey, 1986). In a more recent meta-analysis on the link between personality and subjective well-being, DeNeve and Cooper (1998) reported an average correlation of r = .29 between perceived control and general subjective well-being across 19 studies with young and middle-aged adults. In Lang and Heckhausen’s (2001) study of 480 adults (age range = 20–90 years), perceived control over desirable outcomes was related to three dimensions of subjective well-being: life satisfaction (r = .35), negative affect (r = −.13), and positive affect (r = .58). Together the findings of past research lend support to the claim that personal control over desirable outcomes is associated with high emotional well-being.

Predicting the emotional consequences of perceived personal responsibility for undesirable outcomes is somewhat more difficult. Research in the tradition of the learned helplessness model states that taking responsibility for undesirable outcomes leads to poor psychological adjustment (e.g., Peterson, 1999). Consistent with this view, the meta-analysis of Sweeney and colleagues (1986) revealed an average correlation between this type of control and depression of r = .20. There is also longitudinal work showing that perceptions of personal responsibility for undesirable outcomes in early adulthood had negative effects on physical health that lasted over 20 years (Peterson, Seligman, & Vaillant, 1988). This finding is intriguing; however, other work suggests that personal responsibility for undesirable outcomes may show no relationship to well-being (e.g., Newsom, Knapp, & Schulz, 1996) and can even be associated with good adjustment (e.g., Bulman & Wortman, 1977).

Part of these inconsistencies may be due to individual differences in the interpretation of personal responsibility for undesirable outcomes (Skinner, 1995). In general, this belief implies personal failure and should therefore be associated with low emotional well-being. However, there may be situations in which at least some people interpret personal responsibility for undesirable outcomes in positive ways. For
example, in some situations a belief in personal responsibility might be less unpleasant than the belief that bad things happened by chance. For people with a positive self-concept that emphasizes the possibility of positive changes and personal growth, a belief in personal responsibility for undesirable outcomes may even suggest the potential for control over similar outcomes in the future. Despite these qualifications, in general, personal responsibility for undesirable outcomes appears to be associated with low rather than high emotional well-being.

What are the emotional consequences of perceiving that one needs the help of others to avoid undesirable outcomes or to achieve desirable ones? Perceived others’ control has been considered the dysfunctional counterpart of personal control over desirable outcomes (e.g., Smith & Baltes, 1999). However, the empirical evidence on the adaptivity of perceived others’ control is mixed. Taylor, Lichtman, and Wood (1984) found that perceived others’ control was positively associated with adjustment to cancer. In contrast, Taylor, Helgeson, Reed, and Skokan (1991) reported that perceived others’ control was negatively associated with psychological adjustment in a sample of 24 men diagnosed with HIV infection. Consistent with the latter finding, Affleck, Tennen, Pfeiffer, and Fifield (1987) found that perceived others’ control over symptoms was associated with negative mood in patients with rheumatoid arthritis. In Helgeson’s (1992) study of 97 patients with coronary heart disease, perceived others’ control was associated neither with general distress nor with psychological adaptation to the disease.

Given these mixed results, it is difficult to ascertain whether perceived others’ control has positive or negative emotional consequences. Again, part of the inconsistencies across studies may be due to the interpretation of perceived others’ control. As M. M. Baltes (1996) pointed out, a critical question is whether perceived others’ control implies trust in other people to act on one’s own behalf or dependency on other people who may act to fulfill their own needs. Perceived others’ control in the sense of social confidence reflects the belief that one can profit from the control potential of others (e.g., “When I want them to, other people will help to arrange for good things to happen”) and may therefore have positive emotional consequences (see also Bandura, 1997). In contrast, a belief in others’ control in the sense of social dependency does not emphasize the active role of the self, and it remains open whether other people do or do not act in one’s own interest (e.g., “I depend on others to ensure that I have no problems”). This kind of belief can be expected to be a risk factor for low emotional well-being.

**The Present Study**

This study extended past research on the relation between generalized perceived control and emotional well-being in three ways. First, we investigated a heterogeneous sample of individuals aged between 70 and 103 years ($M_{\text{age}} = 85$ years). Much of the relevant evidence on the association between perceived control and emotional well-being is based on studies with selected and small samples of middle-aged people facing major stressful life events such as life-threatening illnesses. Although this study was unique in that we studied old and very old people, our hypotheses were based on past research. We predicted that perceived personal control over desirable outcomes would be associated with high emotional well-being, whereas perceived personal responsibility for undesirable outcomes and perceived others’ control (as emphasizing social dependency rather than self-confidence) should be associated with low emotional well-being.

Second, positive and negative affect were considered as two distinct indicators of emotional well-being. Empirical studies on the adaptivity of perceived control have typically examined negative emotional states such as depression and anxiety as indicators of psychological adjustment. However, the absence of negative affect does not necessarily imply positive emotional well-being. Positive and negative affect are two distinct dimensions of emotional well-being rather than two ends of a continuum (e.g., Diener & Larsen, 1993; Watson, Clark, & Tellegen, 1988). The question arises whether beliefs about control are exclusively involved in regulating negative emotions or whether they also have implications for positive emotions such as happiness, enthusiasm, and joy. Research on daily hassles and uplifts suggests a tentative answer. This research has shown that desirable events primarily influence our level of positive affect, whereas undesirable life events primarily influence our level of negative affect (e.g., Zautra, Potter, & Reich, 1997). On the basis of this observation, we refined our more general hypotheses about the relation between perceived control and emotional well-being. Specifically, we predicted that personal control over desirable outcomes would be primarily associated with high positive affect, whereas personal responsibility for undesirable outcomes would be primarily related to high negative affect. Given that perceived others’ control refers to desirable and undesirable outcomes in this study, we predicted that it would be associated with both low positive affect and high negative affect.

Third, we investigated cross-sectional and longitudinal relationships between perceived control and emotional well-being. The majority of earlier studies on the adaptivity of perceived control is cross-sectional. The few longitudinal studies that exist involved short time intervals of several months (one exception is Peterson et al., 1988). Thus, it is an open question whether the effects of perceived control persist over longer periods of time. Given the possibility that individual differences in perceived control may vary over time, a second question arises: Are differential changes in perceived control related to differential changes in emotional well-being? In the present two-wave longitudinal study, we investigated first-wave levels of perceived control and differential changes in perceived control as predictors of differential changes in emotional well-being over approximately 4 years.

**Methods**

The focus of this study was the 206 participants of the Berlin Aging Study (BASE) who completed two waves of the intensive data protocol (1990–1993 and 1995–1996). A description of the longitudinal sample and study design is provided in Smith and colleagues (2002). To facilitate the interpretation of our longitudinal findings, we also report cross-sectional findings based on the original first-wave sample of BASE ($N = 516$). The measures that were central...
to the present study were included in the Multidisciplinary Intake Assessment or in one of the sessions conducted by the Psychology Unit (for a detailed description of the BASE sample, design, and measures see P. B. Baltes & Mayer, 1999).

**Measures**

**Perceived control.**—Three dimensions of generalized perceived control were assessed by a self-report measure developed after Levenson (1981; see Smith & Baltes, 1999). Perceived personal control over desirable outcomes and personal responsibility for undesirable outcomes were both measured by three items, whereas perceived others’ control over desirable and undesirable outcomes was measured by four items (see also Table 1). Participants were asked to indicate on a 5-point scale, ranging from 1 (very much) to 5 (not at all), the extent to which each item applied to them.

**Emotional well-being.**—Two dimensions of emotional well-being were assessed by a German translation of the Positive Affect Negative Affect Schedules (PANAS; Watson, Clark, & Tellegen, 1988; see also Kunzmann, Little, & Smith, 2000). The PANAS consist of 10 positive emotion adjectives and 10 negative emotion adjectives. Participants were asked to indicate on a 5-point scale, ranging from 1 (very often) to 5 (not at all), how frequently they had experienced each emotion during the past year (items are listed in Table 1).

**Statistical Analyses**

To test our predictions, we used structural equation modeling techniques. Model fit was assessed by the following fit statistics: $\chi^2$ value with its associated degrees of freedom and probability level, root-mean-square error of approximation (RMSEA), nonnormed fit index (NNFI), and normed fit index (NFI). Given that some of our models examined measurement invariance across samples or over time as well as longitudinal changes of the latent constructs, neither the observed nor the latent variables were standardized within groups or waves. Covariance matrices were analyzed by applying the maximum likelihood procedure as a method of parameter estimation.

**RESULTS**

**Cross-Sectional Analyses**

Model specification and fit of the measurement model.—Perceived control was specified as a three-factor structure. Personal control over desirable outcomes and personal responsibility for undesirable outcomes were each specified by three items. Items for perceived others’ control and the two dimensions of emotional well-being were divided into subscales by random assignment to ensure greater reliability and generality of the indicators. Specifically, perceived others’ control was defined by two subscales, each comprising two items. Positive affect and negative affect were both identified by three subscales comprising either three or four items (see Table 1). Residual variances were specified to be uncorrelated. For purposes of identification, the five latent factor variances were fixed to 1.0, and the factor loadings of the two indicators of perceived others’ control were constrained to be equal. The relationships among the five latent factors were specified as bivariate correlations. This specified model showed acceptable fit with the data of the original first-wave sample, $\chi^2(68, N = 516) = 130.50, p = .00$, RMSEA = .04, NFI = .95, NNFI = .97. As seen in Table 1, all estimated factor loadings were reasonable, a further indication of an acceptable fit between the hypothesized model and the sample data.

Cross-sectional relationships between perceived control and emotional well-being in the original first-wave sample (N = 516).—We analyzed the zero-order correlations between perceived control and emotional well-being first. Consistent with our predictions, personal control over desirable outcomes was positively associated with positive affect ($r = .37, p < .01$) but was not significantly associated with negative affect ($r = -.06$). Personal responsibility for undesirable outcomes was positively associated with negative affect ($r = .15, p < .05$) but did not show a significant

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**Table 1. Unstandardized Factor Loadings and Communalities for the Cross-Sectional Model of Perceived Control and Emotional Well-Being in the First-Wave Sample (N = 516)**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Factor Loading</th>
<th>T</th>
<th>SE</th>
<th>R²a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal control over desirable outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I can make sure that good things come my way.</td>
<td>.71</td>
<td>5.46</td>
<td>.05</td>
<td>.54</td>
</tr>
<tr>
<td>2. It’s up to me to arrange for all the good things in my life.</td>
<td>.70</td>
<td>15.74</td>
<td>.05</td>
<td>.57</td>
</tr>
<tr>
<td>3. When I get what I want, it is usually because I have worked hard for it.</td>
<td>.40</td>
<td>10.56</td>
<td>.04</td>
<td>.25</td>
</tr>
<tr>
<td>Personal responsibility for undesirable outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. It’s my fault if something goes wrong in my life.</td>
<td>.39</td>
<td>7.45</td>
<td>.05</td>
<td>.15</td>
</tr>
<tr>
<td>2. If something goes wrong in my life, it’s usually because I did not take enough care.</td>
<td>.55</td>
<td>11.04</td>
<td>.05</td>
<td>.41</td>
</tr>
<tr>
<td>3. If there are problems in my life, then they are my own doing.</td>
<td>.70</td>
<td>11.02</td>
<td>.08</td>
<td>.53</td>
</tr>
<tr>
<td>Perceived others’ control over desirable and undesirable outcomesb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Subscale: The good things in my life are determined by other people; other people generally make sure that nothing goes wrong in my life.</td>
<td>.87</td>
<td>25.53</td>
<td>.03</td>
<td>.60</td>
</tr>
<tr>
<td>2. Subscale: Other people generally arrange for good things to happen in my life; I depend on others to ensure that there are no problems in my life.</td>
<td>.87</td>
<td>25.53</td>
<td>.03</td>
<td>.66</td>
</tr>
<tr>
<td>Positive affectb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Subscale: excited, alert, active, proud</td>
<td>.52</td>
<td>19.88</td>
<td>.03</td>
<td>.64</td>
</tr>
<tr>
<td>2. Subscale: interested, strong, inspired</td>
<td>.50</td>
<td>18.63</td>
<td>.03</td>
<td>.57</td>
</tr>
<tr>
<td>3. Subscale: enthusiastic, determined, attentive</td>
<td>.59</td>
<td>20.92</td>
<td>.03</td>
<td>.69</td>
</tr>
<tr>
<td>Negative affectb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Subscale: nervous, guilty, scared, hostile</td>
<td>.54</td>
<td>23.17</td>
<td>.03</td>
<td>.75</td>
</tr>
<tr>
<td>2. Subscale: distressed, irritated, ashamed</td>
<td>.55</td>
<td>20.94</td>
<td>.03</td>
<td>.65</td>
</tr>
<tr>
<td>3. Subscale: jittery, afraid, upset</td>
<td>.63</td>
<td>21.89</td>
<td>.03</td>
<td>.69</td>
</tr>
</tbody>
</table>

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*a Communalities ($R^2$) = 1 standardized residual variance.

*b To ensure better reliability of the indicators, items were randomly divided into subscales that represent unit-weighted composite indexes of selected items.
association with positive affect ($r = .06$). Perceived others’ control over desirable and undesirable outcomes was negatively related to positive affect ($r = -.15, p < .01$) and positively associated with negative affect ($r = .23, p < .01$). Findings also supported earlier research suggesting that perceived control (e.g., Lachman, 1986) and emotional well-being (e.g., Diener & Larsen, 1993) are both multidimensional constructs. Specifically, positive and negative affect were not correlated ($r = .04$). The two dimensions of personal control were only moderately interrelated ($r = .33, p < .01$), and perceived others’ control was related neither to personal control over desirable outcomes ($r = .06$) nor to personal responsibility for undesirable outcomes ($r = .03$).

In a second step, we analyzed the independent cross-sectional effects of the three dimensions of perceived control on positive and negative affect in the original first-wave sample (presented in the circles of Figure 1A). For the most part, these effects mirrored the respective zero-order correlations. One exception was the significant effect of personal control over desirable outcomes on negative affect ($\beta = -.17, p < .01$). However, personal control over desirable outcomes had a significantly stronger effect on positive affect than on negative affect ($\beta_1 = .43, \beta_2 = -.17, z = 3.99$). Consistent with our predictions, personal responsibility for undesirable outcomes had only a significant effect on negative affect ($\beta = .21, p < .01$), and the effects of perceived others’ control on positive and negative affect did not significantly differ in terms of strength ($\beta_1 = -.20, \beta_2 = .25, z = .83$) (see Appendix, Note 2).

Cross-sectional relationships between perceived control and emotional well-being in the longitudinal sample ($N = 206$).—We next analyzed whether the cross-sectional relationships between perceived control and emotional well-being that were found in the original first-wave sample ($N = 516$) were also present in the longitudinal sample ($N = 206$) (see Appendix, Note 3). Although the relationships between perceived control and emotional well-being could be constrained to be equal across samples without losing model fit, analyzing exclusively the longitudinal sample showed that some of the effects of perceived control on emotional well-being did differ across samples. The rectangles in Figure 1A represent the cross-sectional effects of perceived control on emotional well-being in the longitudinal sample when constrained to be equal across the two waves of this study. As seen, in the longitudinal sample personal control over desirable outcomes was significantly related to high positive affect ($\beta = .29, p < .01$) and low negative affect ($\beta = -.17, p < .01$), whereby the strength of these two effects did not significantly differ ($\beta_1 = .29, \beta_2 = -.17, z = 1.21$). As described above, in the original first-wave sample personal control over desirable outcomes had a significantly stronger effect on positive than on negative affect. The reduced association between personal control over desirable outcomes and positive affect in the longitudinal sample may have been due to the restricted variance of positive affect in that sample (see Appendix, Note 3). Personal responsibility for undesirable outcomes was related neither to positive affect nor to negative affect in the longitudinal sample. In the original first-wave sample, however, this type of perceived control was significantly related to high negative affect. Only the effects of perceived others’ control did not differ across the original first-wave and longitudinal samples. In the longitudinal sample, this type of perceived control was associated with both high negative affect ($\beta = .34, p < .01$) and low positive affect ($\beta = -.28, p < .01$).

That personal responsibility for undesirable outcomes was associated with high negative affect in the original first-wave sample but showed no relationship to negative affect in the longitudinal sample was surprising. According to our selectivity analyses (see Appendix, Note 3), this inconsistency cannot be attributed to reduced variances of the constructs in the longitudinal sample. A follow-up analysis suggested that differences in resource availability across samples might have produced the difference in findings. Compared with the members of the original first-wave sample, the continuers of the longitudinal study were significantly younger, healthier, better educated, and possessed more socially desirable personality traits. A regression analysis in the origi-
nal first-wave sample showed that resource availability (as represented by the mean of openness to experiences, extraversion, emotional stability, good physical health, high education, and young age) moderated the relationship between personal responsibility for undesirable outcomes and negative affect, \( F(1,514) = 4.24, p = .04 \). This control belief was associated with high negative affect in individuals with low resource availability (\( r = .20, p < .01 \)), but it was not associated with negative affect in individuals with high resource availability (\( r = .02; \) resource availability groups were derived by using a median split of the resource availability variable).

**Longitudinal Analyses**

**Model specification and fit of the measurement model.**—To test our longitudinal predictions, we specified a two-wave covariance structure model (for details of model specification see Kunzmann, 1999; Kunzmann et al., 2000). The baseline longitudinal model testing configural invariance of the proposed model showed acceptable fit, \( \chi^2(307, N = 206) = 461.34, p = .00, \text{RMSEA} = .05, \text{NFI} = .84, \text{NNFI} = .92 \). Hierarchical model testing revealed that the factor loadings of each factor’s corresponding indicators were metrically invariant across the two waves, \( \Delta \chi^2(8, N = 206) = 3.54, p = .90 \). No constraints were placed on the structural model.

**Descriptive results on stability and change over time.**—To facilitate the interpretation of our central findings regarding the relation between perceived control and differential change in emotional well-being, we first report descriptive information about these constructs. The stability coefficients for personal control over desirable outcomes (\( r = .51 \)), personal responsibility for undesirable outcomes (\( r = .50 \)), and perceived others’ control (\( r = .57 \)) were of moderate size. The stability coefficients of positive affect (\( r = .72 \)) and negative affect (\( r = .81 \)) were somewhat higher (see Appendix, Note 4). However, about one half of the reliable variance in positive and negative affect at the second wave remained unexplained by the respective first-wave constructs and can be considered as “change” variance. We next analyzed whether perceived control was associated with this change variance in positive and negative affect.

**First-wave levels of perceived control as predictors of differential changes in emotional well-being.**—Perceived others’ control was the only dimension of perceived control that predicted differential changes in one of the two components of emotional well-being. Those participants who believed they were dependent on others at the first wave, were more likely to experience a decline in positive affect over time (\( \beta = -.31, p < .01 \)). One feature that might have worked against finding support for our prediction that first-wave levels in the two self-related dimensions of perceived control predict changes in emotional well-being is their low covariance stability (i.e., participants differed considerably in how they changed over time). Whether these individual differences in intra-individual changes in perceived control predict differential changes in emotional well-being was analyzed next.

**Differential changes in perceived control as predictors of differential changes in emotional well-being.**—Differential changes in all of the three dimensions of perceived control were related to differential changes in positive affect, negative affect, or both. However, perceived others’ control was the only dimension of perceived control for which the longitudinal effects mirrored the cross-sectional ones (see Figures 1A and 1B). Those participants who experienced an increase in perceived others’ control were more likely to also experience an increase in negative affect (\( \beta = .25, p < .01 \)) and a decline in positive affect (\( \beta = -.30, p < .01 \)) over time.

Differential changes in personal control over desirable outcomes were inversely associated with differential changes in negative affect (\( \beta = -.31, p < .01 \)) and showed no significant associations with differential changes in positive affect. This finding is inconsistent with the cross-sectional evidence that suggested a positive association between personal control over desirable outcomes and high positive affect (see Figure 1A). Despite this inconsistency, cross-sectional and longitudinal evidence both indicate that personal control over desirable outcomes is associated with high general emotional well-being.

The cross-sectional and longitudinal findings regarding personal responsibility for undesirable outcomes were less consistent. Our cross-sectional analyses in the original first-wave sample suggested that personal responsibility for undesirable outcomes is associated with high levels of negative affect. In the longitudinal sample, this type of perceived control did not show cross-sectional relations either with negative affect or with positive affect (see Figure 1A). Finally, our longitudinal analyses showed that those people who experienced an increase in personal responsibility for undesirable outcomes were likely to also experience an increase in positive affect over time (\( \beta = .42, p < .01 \); see Figure 1B).

**DISCUSSION**

Corroborating prominent theories of perceived control (e.g., Bandura, 1996; Skinner, 1995; Taylor & Brown, 1988), the present cross-sectional and longitudinal evidence suggests that perceived personal control over desirable outcomes is associated with high emotional well-being. Whereas past empirical work documented the positive emotional consequences of a belief in personal control over desirable outcomes in middle adulthood (approximately up to age 60; Sweeney et al., 1986), the present study suggests that this type of perceived control continues to be an important contributor to emotional well-being into old and very old age.

In light of this evidence, the focus of most gerontological research on the negative aspects of old age and on how older people cope with those aspects appears to be too narrow and one sided. Gaining control over desirable outcomes might be as important to older people’s life quality as gaining control over undesirable ones. The high adaptivity of personal control over desirable outcomes is one indication that research on aging might benefit from a shift in focus to the potentially positive and desirable events in older people’s
lives that exist independently from the many losses and problems that are also prevalent in old age (see also Benyamini, Idler, Leventhal, & Leventhal, 2000).

The question of whether personal responsibility for undesirable outcomes is associated with high or low emotional well-being could not be answered clearly. The inconsistent results of the present study join the mixed evidence provided by past work (e.g., Newsom et al., 1996). In our original first-wave sample, personal responsibility for undesirable outcomes was associated with high negative affect; however, this cross-sectional relationship was not significant in the longitudinal sample. Selective mortality may be one reason for this inconsistency. Although the original first-wave and longitudinal samples did not differ in terms of negative affect or personal responsibility for undesirable outcomes (mean values and individual differences were invariant), the continuers, on average, were younger and had more resources available. Our follow-up analysis in the original first-wave sample suggests that those participants with relatively few resources suffer emotionally from perceiving personal responsibility for undesirable outcomes, whereas this type of control belief is unrelated to negative affect in people who have access to a wider range of resources. The longitudinal results were consistent with the idea that personal responsibility for undesirable outcomes may not always be a risk factor for high negative affect. To the contrary, those continuers of the longitudinal study who experienced an increase in this type of control were likely to also experience an increase in positive affect. We cannot rule out, however, that this longitudinal relationship would also apply to a sample of people with low resource availability.

Future work should study more thoroughly whether the adaptivity of personal responsibility for undesirable outcomes depends on the resources available to an older person. Do older people with access to a wide range of resources interpret personal responsibility in positive ways and associate it with trying to avoid future failures? More work is needed also to determine the moderating effects of different types of resources. Generally speaking, our result that some older people can hold what are thought to be dysfunctional control beliefs and yet do not experience a decline in emotional well-being points to the importance of taking contextual factors into account when investigating the adaptivity of perceived control in old age.

Perceiving that other people have control over one’s personal affairs was shown to be associated with high negative affect and low positive affect. Our cross-sectional and longitudinal findings consistently pointed to the negative emotional implications of perceived others’ control. Although perceived others’ control may become increasingly realistic as people age, this type of control seems to remain dysfunctional and unpleasant. An interesting question for future work is whether some older people might be able to mitigate the generally negative emotional effects of perceived others’ control by preserving or even strengthening their belief in personal control. As suggested by the nonsignificant correlation between perceived personal versus perceived others’ control, one can hold both types of control beliefs at the same time. Another suggestion for future work is to simultaneously investigate the emotional consequences of two connotations of perceived others’ control: dependency on and confidence in other people. Although feelings of social dependency may lead to low emotional well-being, confidence in being able to share in other people’s control and to use powerful others for one’s own ends might have emotional benefits.

Beliefs About Control Are Important for Both Negative and Positive Affect

The present findings strongly suggest that beliefs about control are important contributors to both positive and negative affect. However, we did not find consistent support for our prediction that control over desirable outcomes is primarily associated with positive affect, whereas responsibility for undesirable outcomes is primarily related to negative affect. Although the cross-sectional findings in the original first-wave sample were consistent with this prediction, we could not confirm the predicted differential prediction pattern when analyzing the respective cross-sectional and longitudinal relationships between perceived control and emotional well-being in the longitudinal sample. At this point, it is difficult to offer a substantive reason for the contrasting results. Future work should study the present predictions using a more comprehensive measure of perceived control than was used in this study. From an action theoretical point of view, it would also be interesting to know whether beliefs about personal control over desirable and undesirable outcomes motivate individuals to actually achieve desirable outcomes or to avoid undesirable ones.

Caveats

Longitudinal studies in old and very old age are rare. One strength of this study is the follow-up of 206 participants of a heterogeneous sample of 516 aged between 70 and 100 years. At the same time, however, we recognize the limitation of having only two waves of data collection that were 4 years apart. A better understanding of the dynamics and processes that link control beliefs and emotional well-being would be gained with additional measurement points covering retest intervals of different time periods (e.g., Eizenman, Nesselroade, Featherman, & Rowe, 1997). Given that the present evidence is correlational rather than experimental, it is important also to acknowledge that causal interpretations are, strictly speaking, not justified. Clearly, compared with cross-sectional studies, longitudinal studies provide more evidence for a directional interpretation of covariances by establishing a temporal sequence in which predictor variables precede potential outcome variables in time. Our longitudinal findings, however, provided little evidence regarding the question of whether perceived control is an antecedent or consequence of emotional well-being. Only first-wave levels in perceived others’ control were associated with differential changes in one dimension of emotional well-being (positive affect). The low temporal stability of perceived control may be one factor that worked against finding evidence for our prediction that perceived control at the first wave would predict differential changes in positive and negative affect. However, consistent with findings of social-psychological intervention studies (e.g., Langer & Rodin,
1976), differential changes in all of the present three dimensions of perceived control were associated with differential changes in one or both components of emotional well-being. Despite these caveats, the present findings lend support to the idea that perceptions of control can have a substantial influence on older people’s emotional well-being. An answer to the question whether perceived control is adaptive or dysfunctional, however, requires the specification of a number of factors, including the specific type of control and emotional well-being considered as well as an older person’s contextual and self-related resources.

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Appendix

Notes

Although the present study’s scale to assess beliefs about others’ control includes different items with regard to desirable (two items) and undesirable (two items) outcomes, previous analyses (Kunzmann, 1999) suggested that it was not possible to differentiate two perceived others’ control factors according to the valence of outcomes (desirable vs undesirable).

The effects of the three dimensions of perceived control on positive and negative affect remained basically unchanged after 14 alternative predictors of positive and negative affect were controlled for, including education, gender, functional health, number of leisure and health-related activities, personality traits, coping styles, and self-rated quality of social relations.

Before doing so, however, we conducted three sets of selectivity analyses testing the invariance of our model on the measurement level (i.e., invariance of loadings and intercepts) and on the structural level (i.e., invariance of the factor variances, covariances, and means) across the original first-wave (N = 516), the longitudinal (N = 206), and the noncontinuer (N = 310) samples. Our model was invariant across all three samples on the measurement level. Differences between samples on the structural level concerned the mean levels of positive affect (higher in the longitudinal sample than in the other two samples) and perceived others’ control (lower in the longitudinal sample). With one exception (i.e., the variance of positive affect was reduced in the longitudinal sample), the variance of the constructs were shown to be invariant across samples.

Findings derived from a two-wave mean and covariance structures model showed that the means of personal control over desirable outcomes (M₁ = 3.64; M₂ = 3.64) and personal responsibility for undesirable outcomes (M₁ = 3.49; M₂ = 3.39) were stable over time, whereas the mean of perceived others’ control significantly increased (M₁ = 2.30; M₂ = 2.52; p < .01). The means of positive affect (M₁ = 3.32; M₂ = 3.29) and negative affect (M₁ = 2.39; M₂ = 2.34) were stable across the two waves.