

Early life adversity as a predictor of sense of purpose during adulthood

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Abstract

Feeling a sense of purpose in life appears to hold consistent benefits for positive aging and well-being. As such, it is important to consider the potential factors that promote or hinder the development of purposefulness over the lifespan. For instance, it remains unclear whether early life experiences, particularly adverse ones, may hold lasting influences on whether one feels purposeful into adulthood. The current study examined whether early life adversity predicted a diminished sense of purpose in adulthood using data from participants ($N = 3835$) in the Midlife in the United States (MIDUS) study. Reports of early life adversity were associated with lower levels of purpose in adulthood, and chronological age failed to moderate this relationship.

Keywords

adult well-being, early adversity, lifespan development, purpose in life

Cumulative disadvantage theories (Dannefer, 1987, 2003; O’Rand, 1996) argue that adverse events experienced during childhood and adolescence can set an individual on a trajectory of suboptimal psychosocial development because these individuals do not adequately develop key psychological resources, such as sense of self and agency (Brown & Harris, 1989; McLeod & Almazan, 2003). If adversity hinders the ability to develop these resources, individuals experiencing early adversity may find it difficult to develop a purpose in life, defined as having long-term life aims that direct daily behaviors and organize one’s sense of self (McKnight & Kashdan, 2009; Ryff, 1989), a construct typically associated with elevated perceptions of personal agency (Hill, Burrow, & Sumner, 2013). The current study examines whether and how early life adversity (during childhood and adolescence) influences individuals’ sense of purpose decades later in adulthood. If such long-term effects do occur, it could prove particularly detrimental given the myriad benefits associated with having a purpose across the lifespan.

Finding a purpose in life has been repeatedly nominated as a marker of positive development (Hill et al., 2013; McKnight & Kashdan, 2009). With respect to physical health, individuals with a higher sense of purpose outlive their counterparts (e.g. Boyle, Barnes, Buchman, & Bennett, 2009; Hill & Turiano, 2014). Moreover, individuals with a higher sense of purpose tend to report greater well-being in adolescence (Burrow, O’Dell, & Hill, 2010; Kiang, 2012), emerging adulthood (Hill, Edmonds, Luyckx, Peterson, & Andrews, 2016; Sumner, Burrow, & Hill, 2015), and the adult years (Ryff & Keyes, 1995; Zika & Chamberlain, 1992), leading to the notion that it benefits one to derive a purpose in life as early as possible. Yet, research is limited with regard to how early life experiences influence the purpose development process.

Given the linkages between sense of purpose and physical and psychological health, it is worth noting that multiple studies have demonstrated that reports of early adversity can negatively impact later physical and psychological well-being (e.g. Chapman et al., 2004; Dube, Felitti, Dong, Giles, & Anda, 2003; Felitti et al., 1998). This work has considered multiple categories of “adversity,” including psychological and physical abuse, poorer pre-adult

health, and the economic background of upbringing. For instance, research from the Dunedin longitudinal study suggests that experiencing early maltreatment (Danese, Pariante, Caspi, Taylor, & Poulton, 2007) or socioeconomic disadvantage (Poulton et al., 2002) predicts poorer objective health indices in adulthood. Moreover, it appears that retrospective reports of adversity can prospectively predict psychological well-being during later assessment (Landes, Ardel, Vaillant, & Waldinger, 2014).

Experiencing early adversity thus may hinder one’s ability to build a base of positive psychological well-being, which in turn may make it more difficult to actively explore life goals. Following broaden-and-build theory (Fredrickson, 2001), individuals have greater psychological and cognitive resources at their disposal when coming from a positive emotional base. For instance, positive emotions may help individuals expand their attention spans and broaden their consideration of potential actions (Fredrickson & Branigan, 2005). These benefits could prove particularly beneficial for individuals exploring and evaluating different potential life goals and directions. Developmental theorists have suggested that this purpose exploration process often occurs in adolescence and young adulthood (e.g. Bronk, Hill, Lapsley, Talib, & Finch, 2009; Hill et al., 2013), which may help explain cross-sectional research showing that individuals tend to report the highest levels on sense of purpose reaches around middle adulthood (Ryff & Keyes, 1995). However, individuals who experience adversity during childhood and adolescence may be less interested in, or less capable of, purpose exploration during adolescence (see Burrow et al., 2010), and

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this protracted start may lead to a diminished sense of purpose into adulthood.

That said, individuals could differ with respect to how early life events influence their development of a purpose in life. For instance, several individuals may find their purpose in life through reflection upon past events (Hill, Sumner, & Burrow, 2014), even when those events were negative in nature. In other words, the experience of adversity need not guarantee that individuals will develop poor emotional or physical well-being later in life; in fact, previous work focused on the role of parental loss or separation during childhood found little influence of these events on later sense of purpose, using the same national sample employed here (Maier & Lachman, 2000). When considering whether adversity influences individuals differently, it may prove important to test age as moderator of the effects of adversity on sense of purpose, as a proxy for time elapsed since the adverse event. Individuals further removed from the adverse situation (i.e., older adults) may have had greater opportunity to recover from or reflect upon the event(s) in question. Alternatively, if the negative effects of adversity accumulate over time, it may be the case that early adversity becomes more detrimental over adulthood.

The current study tested these claims by examining whether early life adversity predicts lower levels of sense of purpose in adulthood. Adversity was reported across five different domains (physical abuse, emotional abuse, lower socio-economic status (SES), poor household composition, and poor health at age 16), and thus allowing examinations both of the effects of total adversity as well as domain-specific adversity on purpose in life. In addition, we examined whether these effects are moderated by participants' age, to test whether adverse experiences have a more detrimental effect for younger than older adults. Given the potential for reporter biases when providing the outcome (sense of purpose) at the same time as retrospective reports of adversity, we have employed data from two waves the Midlife in the United States Study (MIDUS), with adversity reported prior to sense of purpose, an opportunity not available in that previous study on parental loss and separation (Maier & Lachman, 2000).

Methods

Study sample

Data for this study come from the publicly available first and second waves of the MIDUS. The MIDUS 1 study included 7,108 non-institutionalized, English-speaking adults between the ages 20 and 75 years ($M_{\text{age}} = 46.92$ years, $SD = 12.94$; 52% female). In 2005–2006, MIDUS 2 was conducted as a longitudinal follow-up with 4,963 participants being successfully contacted to participate in another wave of data collection (75% total response rate – adjusting for the 8% too ill to be interviewed or were deceased; for more information on participant retention, see Radler & Ryff, 2010). To be included in the full regression analyses here, participants needed to complete demographic information, such as age, sex, race, education, work status, as well as the measures for adverse life circumstances at MIDUS 1 and sense of purpose at MIDUS 2 ($N = 3,835$), though for the correlational analyses, we provide results for the full sample size that provided information on the two variables of interest (sample sizes provided for each analysis in what follows). Participants who failed to complete all survey questions were significantly more likely to be male ($\chi^2 = 40.49, p = .001$), a minority racial status ($\chi^2 = 107.01, p = .001$), unmarried ($\chi^2 = 146.86,$

$p = .001$), younger ($t = 6.53, p < .001$), completed fewer years of education ($t = 13.44, p < .001$), and reported lower levels of adversity ($t = 3.68, p < .001$), but did not significantly differ with respect to whether they were retired.

Education was coded as the highest level obtained on a scale from 1 (no schooling or some grade school) to 12 (professional degrees such as PhD or MD). The sample primarily identified as Caucasian (white; 91%), and a dummy variable was constructed to contrast whites against all other races in the analyses. Retirement status was assessed by asking participants, “As of right now, are you retired?” and 14% reported being currently retired.

These covariates were selected as control variables in the regression analyses below given past research showing their associations to sense of purpose. Education was included given the researchers have noted a theoretical (McKnight & Kashdan, 2009) and empirical link between sense of purpose and cognitive functioning (Boyle et al., 2012). Meta-analytic work has demonstrated a clear relationship between retirement status and sense of purpose (Pinquart, 2002). Moreover, work with the MIDUS sample has shown associations for sense of purpose and age, education, minority status, marital status, and retirement status (e.g. Ryff, Keyes, & Hughes, 2003). Accordingly, we sought to examine the association between adversity even when accounting for these previously evidenced relationships.

Study variables

Early life adversity. Drawing from previous literature (see Felitti et al., 1998; Greenfield & Marks, 2009; Turner, Wheaton, & Lloyd, 1995) and available MIDUS questions, 16 different indicators were used to measure early life adversity, prior to age 18 (4 items assessing physical abuse, 4 for emotional abuse, 3 for household socio-economic scale (SES), 3 for household composition, and 2 for health at age 16). Across all items, participants' responses were coded as 1 for having experienced that adverse circumstance and 0 for not; therefore, the potential range of scores for each category is between 0 (no report) and the total number of items for the scale. This dichotomization approach was chosen given that some adversity items were necessarily dichotomous to start (e.g. if one's parents had divorced), and thus we decided to code all items in a similar format. Specific items are described in what follows with respect to their overarching category of interest; for analytic purposes, we created both a total count score across all adversity categories ($M = 3.14$; $Mdn = 3$), to reflect overall experience of adversity, as well as count scores for specific categories based on a coding scheme from previous research (c.f., Felitti et al., 1998; Straus, 1979): physical abuse ($M = 0.91$; $Mdn = 1$), emotional abuse ($M = 1.16$; $Mdn = 1$), household SES ($M = 0.81$; $Mdn = 1$), household composition ($M = 0.25$; $Mdn = 0$), and health issues at 16 ($M = 0.10$; $Mdn = 0$).

Participants reported the frequency of early physical and emotional abuse on a scale from 1 (*never*) to 4 (*often*). Respondents were coded as having reported experiencing abuse if they responded that the given item occurred *sometimes* or *often*. Specifically, for emotional abuse, participants were asked how frequently their mother, father, siblings, or anybody else insulted or swore at them; sulked or refused to talk to them; did or said something spiteful; or threatened to hit them. To assess physical abuse participants were asked how frequently someone smashed or kicked something in anger; pushed, grabbed, or shoved them; slapped

Table 1. Multiple regression models predicting purpose levels in adulthood from total adversity score and other predictor variables

Predictor	Model 1			Model 2		
	B (s.e.)	(95% CI)	β	B (s.e.)	(95% CI)	β
Age	-.12 (.14)	(-0.39-0.15)	-.02	-.12 (.14)	(-0.39-0.15)	-.02
Sex (0 = Female, 1 = Male)	-.31 (.22)	(-0.75-0.12)	-.02	-.33 (.22)	(-0.76-0.11)	-.02
Race (0 = White, 1 = Nonwhite)	-.14 (.45)	(-1.01-0.74)	.00	-.15 (.45)	(-1.03-0.72)	-.01
Marital status (0 = Married, 1 = Unmarried)	-1.86 (.24)	(-2.34- -1.38)	-.12*	-1.85 (.24)	(-2.32- -1.37)	-.12*
Education	1.25 (.11)	(1.03-1.47)	.18*	1.25 (.11)	(1.03-1.47)	.18*
Retirement status (0 = Working, 1 = Retired)	-1.47 (.38)	(-2.21- -0.73)	-.07*	-1.45 (.38)	(-2.19- -0.71)	-.07*
Total adversity	-0.68 (.11)	(-0.90- -0.46)	-.09*	-0.67 (.11)	(-0.89- -0.44)	-.10*
Age \times adversity				.19 (.12)	(-0.05-0.42)	.02
Adjusted model R^2	.07			.07		

Note. The change in R^2 between a model with only the chosen covariates and Model 1 (one including total adversity) was .009. Total $N = 3,835$.

* $p < .001$.

them; threw something at them; kicked, bit, or hit them with a fist; hit or tried to hit them with something; beat them up; choked them; burned or scalded them.

Household composition was assessed using dichotomous items that asked participants whether they experienced (a) the lack of a male in the household, (b) parental divorce, or (c) parental death. Household SES was assessed using a dichotomous item asking (a) whether the participant's family was in receipt of welfare, as well as having participants report (b) their financial standing compared to other families on a 1 (a lot better off) to 7 (a lot worse off) scale (scores of 6 or 7 were coded as an adverse event), and (c) the educational level for the head of their household growing up on a scale from 1 (*no school/some grade school*) to 12 (*professional degree*) with adversity coded as whether the head of the household did not have at least some high school education. Finally, to examine early health status, participants reported whether they had poor (a) physical or (b) emotional health at age 16 from 1 (*poor*) to 5 (*excellent*); adversity was coded as reporting health as a 1 or 2.

Sense of purpose. Sense of purpose was assessed at MIDUS 2 (2005–2006) with seven questions from the psychological well-being scale (Ryff & Keyes, 1995). Participants reported from 1 (*Strongly disagree*) to 7 (*Strongly agree*) to the following items: “I live life one day at a time and don’t really think about the future;” “I have a sense of direction and purpose in life;” “I don’t have a good sense of what it is I’m trying to accomplish in life;” “My daily activities often seem trivial and unimportant to me;” “I enjoy making plans for the future and working to make them a reality;” “Some people wander aimlessly through life, but I am not one of them;” “I sometimes feel as if I’ve done all there is to do in life.” A summed score was created based on responses to all seven items ($M = 38.40$; $SD = 6.98$; range = 1–7; $\alpha = .70$).

Results

For all analyses, we employed a more stringent significance threshold of $p < .001$ given the large sample size, which would provide sufficient power for even very modest effects that may be of little practical significance. First, we examined the zero-order correlations for sense of purpose with overall adversity and each of the adversity categories. Sense of purpose was significantly negatively correlated with reports of overall adversity, $r(3900) = -.13$, as well as with respect to most of the individual

adversity categories: emotional abuse, $r(3900) = -.08$, physical abuse, $r(3900) = -.08$, SES disadvantage, $r(3900) = -.10$, and health disadvantage, $r(3900) = -.10$, all p 's $< .001$. Family structure adversity failed to reach significance using our more stringent standard, $r(3899) = -.05$, $p < .01$.¹

Next, we examined whether the effects held when controlling for demographics that correlate with early adversity, and then whether the negative effects of adversity differed across participants. Table 1 presents a series of regression models testing our primary claims with respect to total adversity experienced in childhood. Model 1 presents the initial multiple regression predicting sense of purpose scores from demographic variables (age, sex, race, marital status, education, and retirement status) along with total adversity score. This model demonstrated a significant effect for adversity, insofar that participants who reported experiencing greater childhood adversity also reported lower sense of purpose in adulthood ($\beta = -.09$, $p < .001$).² Model 2 considered whether the effect of total adversity on adult sense of purpose differed by age. Age failed to prove a significant moderator ($\beta = .02$, $p < .05$).

Finally, to break down the effect of adversity on sense of purpose, we considered whether different types of adversity proved specifically detrimental. As noted above, sense of purpose correlated significantly with most individual types of adversity. As one would expect, the different diversity categories tended to be positively correlated, with the strongest association was between emotional and physical abuse, $r(3900) = .65$, $p < .001$. However, all other associations were small-to-medium in magnitude (r 's between .03 and .29), and the overall average correlation was .17, suggesting that multicollinearity was not a significant concern when including all categories in the same analysis. Table 2 presents the findings from our regression analysis that included total count scores from all five adversity categories simultaneously as predictors of adult sense of purpose, in a model along with the demographic covariates. This model suggests that only health disadvantage held a unique effect on sense of purpose in adulthood ($\beta = -.07$, $p < .001$).

Discussion

The current study examined the role of early life adversity on whether individuals reported a sense of purpose in life during adulthood. Retrospective reports of adversity were negatively predictive of current sense of purpose for adult participants. Effect sizes were

Table 2. Multiple regression predicting purpose levels in adulthood from different categories of early adverse experiences, along with demographic control variables

Predictor	B (s.e.)	(95% CI)	β
Age	-.15 (.14)	(-0.43-0.12)	-.02
Sex (0 = Female, 1 = Male)	-.04 (.22)	(-0.81-0.07)	-.02
Race (0 = White, 1 = Nonwhite)	-.11 (.45)	(-0.99-0.77)	.00
Marital status (0 = Married, 1 = Unmarried)	-1.84 (.24)	(-2.32- -1.36)	-.12*
Education	1.27 (.11)	(1.04-1.49)	.18*
Retirement status (0 = Working, 1 = Retired)	-1.47 (.38)	(-2.21- -0.73)	-.07*
Emotional abuse	-.04 (.15)	(-0.66- -0.09)	-.05
Physical abuse	-.14 (.15)	(-0.42-0.15)	-.02
SES disadvantage	-.14 (.12)	(-0.38-0.09)	-.02
Family structure	-.12 (.12)	(-0.36-0.12)	-.02
Health disadvantage	-.50 (.11)	(-0.71- -0.28)	-.07*
Adjusted model R^2	.10		

Note. Total $N = 3,823$. * $p < .001$.

similar across type of adversity, though the effects of family structure failed to reach significance, in line with previous MIDUS research (Maier & Lachman, 2000). When comparing the forms of adversity, though, only a significant unique effect was found for experiencing poorer health in childhood; this form of adversity may be expected to hold a more important role given the close link between sense of purpose and health (e.g. Hill & Turiano, 2014). Though the effect sizes are fairly modest, it is worth noting that early adversity retained a negative effect on sense of purpose held even when controlling for demographic correlates of well-being and sense of purpose in adulthood, such as education, age, and retirement status. That said, it is important to know that these small effect sizes underscore that individuals who experience early adversity are not “doomed” to a lower sense of purpose later in life. Instead, early adversity may be better viewed as a potential risk factor, though some individuals may gain greater clarity on their life direction upon reflection on these adverse events (Hill et al., 2014).

When considering whether adversity influences individuals differentially, moderation analyses suggested that, by and large, the effect of early life adversity on later sense of purpose was similar across ages. Accordingly, the current findings found little evidence either that greater elapsed time since the adverse events helped individuals, or that the negative effects of adversity gained in magnitude over the lifespan. That said, it is possible that some individuals did benefit from greater time to recover, while for others, the negative effects only accumulated with time, which in turn led to a null effect overall for the interaction. Future research should test this possibility in longitudinal data, by examining whether different developmental trajectories in sense of purpose can be identified for individuals experiencing early adversity.

The current study is limited by its employment of single measurements of sense of purpose and adversity, which complicates the ability to understand mechanisms that link adversity experiences to sense of purpose. As such, multi-wave research is needed with earlier measurement occasions that better capture early life experiences. In addition, respondents reporting adversity were significantly less likely to fully complete the surveys, which may lead to selection effects. Though flawed, retrospective reporting is a common practice when assessing early childhood adversity (Hardt & Rutter, 2004), given the obvious difficulties with prospectively measuring adverse experiences. Even with retrospective reports, future work can employ shorter or longer time frames between

early adversity and assessment of outcomes (e.g. measure purpose in adolescence and older adulthood) in order to better capture the process of how adversity influences sense of purpose. In addition, future research should replicate the current work with a more comprehensive measure of sense of purpose, as well as an adversity measure that better targets when in the lifespan these experiences occurred.

These caveats aside, in line with cumulative disadvantage theory (Dannefer, 1987, 2003; O’Rand 1996), the current findings suggest that early events can have a long-term influence on one’s ability to feel a sense of purpose later in life. As such, interventions to promote sense of purpose may wish to identify at-risk individuals by virtue of their early experiences, in order to adjust the intervention for such individuals. However, as research has demonstrated that individuals’ developmental trajectories are differentially susceptible to early contextual influences (e.g. Ellis & Boyce, 2008), we would caution against the assumption that individuals experiencing early adversity “need” intervention. Moreover, future research should investigate whether early adversity also influences which purpose one ultimately chooses. In other words, early life events may not only influence the development of purpose in life, but also which life goals one ultimately selects to pursue.

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Notes

1. In supplemental analyses, correlations suggested that when adversity and sense of purpose were measured at the same occasion (MIDUS 1), the magnitude (and significance) of the correlations were consistent. To avoid the potential for same-measurement bias, and due to the greater reliability of the sense of purpose measure at MIDUS 2, we report here all analyses using MIDUS 2 purpose as the outcome.
2. To test whether experiencing some adversity might help build resilience, we also examined the curvilinear effect of total adversity on sense of purpose. However, this quadratic term failed to reach significance ($b = -.04$, $s.e. = .014$, $p = .37$).

References

- Boyle, P. A., Barnes, L. L., Buchman, A. S., & Bennett, D. A. (2009). Purpose in life is associated with mortality among community-dwelling older persons. *Psychosomatic Medicine, 71*, 574–579.
- Boyle, P. A., Buchman, A. S., Wilson, R. S., Yu, L., Schneider, J. A., & Bennett, D. A. (2012). Effect of purpose in life on the relation between Alzheimer disease pathologic changes on cognitive function in advanced age. *Archives of General Psychiatry, 69*, 499–504.
- Brown, G. W., & Harris, T. O. (1989). *Life events and illness*. New York: Guilford.
- Burrow, A. L., O'Dell, A. C., & Hill, P. L. (2010). Profiles of a developmental asset: Youth purpose as a context for hope and well-being. *Journal of Youth and Adolescence, 11*, 1265–1273.
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82*, 217–225.
- Cotton Bronk, K., Hill, P. L., Lapsley, D. K., Talib, T. L., & Finch, H. (2009). Purpose, hope, and life satisfaction in three age groups. *The Journal of Positive Psychology, 4*, 500–510.
- Danese, A., Pariante, C. M., Caspi, A., Taylor, A., & Poulton, R. (2007). Childhood maltreatment predicts adult inflammation in a life-course study. *Proceedings of the National Academy of Sciences, 104*, 1319–1324.
- Dannefer, D. (1987, March). Aging as intracohort differentiation: Accentuation, the Matthew effect, and the life course. *Sociological Forum, 2*, 211–236.
- Dannefer, D. (2003). Cumulative advantage/disadvantage and the life course: Cross-fertilizing age and social science theory. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 58*(6), S327–S337.
- Dube, S. R., Felitti, V. J., Dong, M., Giles, W. H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine, 37*, 268–277.
- Ellis, B. J., & Boyce, W. T. (2008). Biological sensitivity to context. *Current Directions in Psychological Science, 17*, 183–187.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245–258.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226.
- Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & Emotion, 19*, 313–332.
- Greenfield, E. A., & Marks, N. F. (2009). Profiles of physical and psychological violence in childhood as a risk factor for poorer adult health: evidence from the 1995-2005 National Survey of Midlife in the United States. *Journal of Aging and Health, 21*, 943–966.
- Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry, 45*, 260–273.
- Hill, P. L., & Turiano, N. A. (2014). Purpose in life as a predictor of mortality across adulthood. *Psychological Science, 25*, 1482–1486.
- Hill, P. L., Burrow, A. L., & Sumner, R. A. (2013). Addressing important questions in the field of adolescent purpose. *Child Development Perspectives, 7*, 232–236.
- Hill, P. L., Edmonds, G. W., Peterson, M., Luyckx, K., & Andrews, J. A. (2016). Purpose in life in emerging adulthood: Development and validation of a new brief measure. *The Journal of Positive Psychology, 11*, 237–245.
- Hill, P. L., Sumner, R., & Burrow, A. L. (2014). Understanding the pathways to purpose: Examining personality and well-being correlates across adulthood. *The Journal of Positive Psychology, 9*, 227–234.
- Kiang, L. (2012). Deriving daily purpose through daily events and role fulfillment among Asian American youth. *Journal of Research on Adolescence, 22*, 185–198.
- Landes, S. D., Ardel, M., Vaillant, G. E., & Waldinger, R. J. (2014). Childhood adversity, midlife generativity, and later life well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 69*, 942–952.
- Maier, E. H., & Lachman, M. E. (2000). Consequences of early parental loss and separation for health and well-being in midlife. *International Journal of Behavioral Development, 24*, 183–189.
- McKnight, P. E., & Kashdan, T. B. (2009). Purpose in life as a system that creates and sustains health and well-being: an integrative, testable theory. *Review of General Psychology, 13*, 242–251.
- McLeod, J. D., & Almazan, E. P. (2003). Connections between childhood and adulthood. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 391–411). New York: Kluwer Academic/Plenum.
- O'Rand, A. M. (1996). The precious and the precocious: Understanding cumulative disadvantage and cumulative advantage over the life course. *The Gerontologist, 36*, 230–238.
- Pinquart, M. (2002). Creating and maintaining purpose in life in old age: A meta-analysis. *Ageing International, 27*, 90–114.
- Poulton, R., Caspi, A., Milne, B. J., Thomson, W. M., Taylor, A., Sears, M. R., & Moffitt, T. E. (2002). Association between children's experience of socioeconomic disadvantage and adult health: a life-course study. *The Lancet, 360*, 1640–1645.
- Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. *International Journal of Behavioral Development, 12*, 35–55.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.
- Ryff, C. D., Keyes, C. L. M., & Hughes, D. L. (2003). Status inequalities, perceived discrimination, and eudaimonic well-being: Do the challenges of minority life hone purpose and growth? *Journal of Health and Social Behavior, 44*, 275–291.
- Sumner, R., Burrow, A. L., & Hill, P. L. (2015). Identity and purpose as predictors of subjective well-being in emerging adulthood. *Emerging Adulthood, 3*, 46–54.
- Turner, R., Wheaton, B., & Lloyd, D. A. (1995). The epidemiology of social stress. *American Sociological Review, 60*, 104–125.
- Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology, 83*, 133–145.