Received: 21 December 2023 | Accepted: 24 June 2024

DOI: 10.1111/aphw.12576

ORIGINAL ARTICLE

APPLIED PSYCHOLOGY: Health and Well-Being IAAP

Associations of global and specific components of positive psychological well-being with mortality risk: Findings from two cohort studies

Yoobin Park[1] | **Anne-Josee Guimond**[2] | **Alexandra D. Crosswell**[1] | **Laura D. Kubzansky**[3]

[1]University of California San Francisco, San Francisco, California, USA

[2]Social and Behavioral Sciences, Harvard University T H Chan School of Public Health, Boston, Massachusetts, USA

[3]Harvard University T H Chan School of Public Health, Boston, Massachusetts, USA

Correspondence
Yoobin Park, University of California San Francisco, 675 18th st, San Francisco, CA 94107, USA.
Email: yoobin.park@ucsf.edu

Funding information
National Institute on Aging, Grant/Award Number: U24AG072699

Abstract

Previous studies have examined how various aspects of positive psychological well-being (PPWB) independently relate to healthy aging, yet a notable gap remains in understanding the effects of their overlap (i.e., shared variance). We used data from two longitudinal cohorts, the Midlife Development in the United States Study and the Health and Retirement Study ($N = 3{,}302$ and 7,209), each of which assessed hedonic and eudaimonic facets of PPWB (positive affect, purpose in life, personal growth, and self-acceptance) and tracked mortality status across 14–15 years of follow-up. We derived a global factor identifying elements common across PPWB facets and also specific PPWB factors from a bifactor model. Then, we examined if higher PPWB levels (global and specific) are associated with mortality risk. Across cohorts, higher global well-being factor levels were associated with reduced mortality risk, even after adjusting for a range of potential confounders. Fewer independent associations were evident with the specific PPWB factors. Findings suggest that variance common across hedonic and eudaimonic facets of PPWB is associated with lower mortality risk. Considering the shared versus unique effects of different

PPWB facets can offer valuable insights for theorizing mechanisms underlying health benefits of PPWB and guiding decisions about intervention targets.

KEYWORDS

aging, emotional well-being, longevity, mental health, psychosocial well-being

INTRODUCTION

Much evidence has accumulated to suggest that higher positive psychological well-being (PPWB) is prospectively associated with better physical health as characterized by slower onset or progression of disease, faster recovery from illness, and greater longevity (Boehm & Kubzansky, 2012; Chida & Steptoe, 2008; Diener & Chan, 2011; Hernandez et al., 2018; Howell et al., 2007). Broadly, PPWB comprises multiple facets that encompass both experiential (e.g., momentary emotions) and reflective (e.g., sense of meaning) features[1] (Park et al., 2023). PPWB is not simply a state absent of negativity and, in fact, can be experienced in the midst of events that trigger negative emotions.

Studies of different PPWB facets often find that they relate to the same health outcome (Trudel-Fitzgerald et al., 2021; also see Martín-María et al., 2017). However, with most studies examining one PPWB facet at a time, little attention has been given to the interrelated nature of various PPWB facets and the impact of such overlap. Indeed, we have "virtually no knowledge of the separable versus overlapping effects" of specific PPWB facets on health outcomes (Diener et al., 2017, p. 147). This is a critical gap in the literature as the question about the overlap across various PPWB facets carries important practical implications. For example, whether certain facets of PPWB drive the observed links with health or the effects are largely due to shared variance across multiple facets could influence the development of intervention strategies targeting PPWB for the purpose of improving health. In the current research, we examine associations of specific PPWB factors, as well as what is common across them, with mortality risk in two cohort studies.

The structure of PPWB

Despite the varied ways researchers have conceptualized PPWB to date, one point of consensus is that PPWB is a multidimensional construct that captures multiple psychological aspects of well-being. Different theoretical approaches to conceptualizing PPWB have focused on various psychological features. Diener's (1984) model of subjective well-being, for example, captures emotional experiences (e.g., positive affect) and evaluations of one's life (e.g., life satisfaction). Another model proposed by Ryff (1989) focuses more on eudaimonic aspects and considers related dimensions of psychological functioning such as having a sense of purpose in life, continued development of one's potential, and acceptance of the self.

[1]In line with prior research (e.g., Boehm & Kubzansky, 2012), we use the term "positive psychological well-being" throughout the manuscript. Please see Park et al. (2023) and the accompanying commentaries for a more in-depth discussion on terminology in this field.

Mirroring the long-running debates regarding the presence of a general factor (the "p-factor") underlying multiple forms of disorders in the field of psychopathology (Smith et al., 2020), investigators have debated the structure of PPWB and how different facets of PPWB may be related to each other. This includes work that examined the structure of PPWB facets within a singular theoretical framework (e.g., Ryff & Singer, 2006; Springer & Hauser, 2006) and more notably, across different frameworks. Similar to work on psychopathology and the "p-factor," research considering PPWB facets derived from different theoretical traditions has generally suggested that such facets do, in fact, share commonalities (Chen et al., 2013; Disabato et al., 2016). However, a general factor could emerge simply as a statistical artifact (van Bork et al., 2017). Whether the general factor actually captures a substantive construct that can predict health outcomes has not been examined; evaluating these associations can help us better understand the meaning of the general factor.

PPWB in relation to physical health

Considering the potential overlap between various PPWB facets when examining their associations with health outcomes also has crucial implications for understanding the mechanisms underlying these relationships. Focusing on the effects of a specific facet and disregarding potential overlapping effects of multiple facets can lead to misleading conclusions about the processes driving these effects. Similar concerns have been raised in other areas—for example, researchers studying different negative affective dispositions (e.g., depression and anxiety) as health risk factors have underscored the need to consider their overlapping features (i.e., the general propensity to experience various negative emotions) and correlated processes (Suls, 2018).

Nevertheless, most research linking PPWB to physical health outcomes has focused on a single facet (e.g., Boyle et al., 2009), with only some studies considering multiple PPWB (and related) facets in relation to the same outcome within the same sample (Boehm et al., 2015; Sutin et al., 2018). For example, a recent investigation of the link between PPWB and mortality risk used data from the Health and Retirement Study (HRS) and fit a model in which five PPWB-related variables (positive affect, purpose in life, life satisfaction, social support, and optimism) were *simultaneously* entered as predictors of mortality risk. A series of separate models, each including one PPWB-related variable at a time, were also evaluated. Although each variable was significantly associated with lower mortality risk when considered as an independent predictor, differences emerged in the model that included all facets whereby some no longer exhibited independent associations (Boylan et al., 2022). The researchers interpreted these findings as suggesting meaningful overlap between the facets although they did not directly test whether such shared variance itself was related to mortality risk.

In the present research, we directly model the overlap between multiple PPWB facets and examine how their shared variance is related to mortality risk. Specifically, we focus on four facets—positive affect, purpose in life, personal growth, and self-acceptance—that were previously identified as relevant in prior research and also available in both the HRS and the Midlife Development in the United States Study (MIDUS).[2] Previous research suggests that each of these facets independently relates to lower mortality risk (e.g., positive affect: Petrie et al., 2018;

[2]Although both studies also assessed life satisfaction, another PPWB facet, we did not include it given the measurement discrepancies (a five-item measure used in HRS vs. a single item in MIDUS). In particular, life satisfaction in MIDUS would make a single-indicator factor which blends reliable and error variance.

purpose in life: Hill & Turiano, 2014; personal growth: Zaslavsky et al., 2014; self-acceptance: Ng et al., 2020), although the amount and robustness of evidence varies (see Trudel-Fitzgerald et al., 2021, for a review). While some evidence on cognitive health suggests not all facets of well-being are similarly protective (Willroth et al., 2023), there has not yet been an investigation considering associations of both what is unique across PPWB facets and what is shared across them in relation to mortality risk. Using a bifactor model, we partitioned the total covariance among the items assessing each of the four PPWB facets into a global component (i.e., what is shared across the items) and specific components (i.e., what is left as unique among items designed to assess a specific facet) and examined their associations with mortality risk in each cohort. To account for potential confounding variables, we followed the recommendations of Trudel-Fitzgerald et al. (2021) and included sociodemographic characteristics, physical health conditions, and biobehavioral risk factors in our models. We also controlled for depression status to distinguish any effects of well-being from those of ill-being. We employed a stepwise modeling approach, progressively adding each set of covariates to our models.

METHODS

Transparency and openness

The data and full information about the associated studies can be found online (at https://www.icpsr.umich.edu/web/ICPSR/series/203 and https://hrs.isr.umich.edu/). The analysis code is available online (at https://osf.io/c68ek/). Our study was not preregistered.

Cohort 1: MIDUS

Participants and procedure

We used data from the MIDUS, an ongoing longitudinal study of American adults that began in 1995. The data and full information about the study can be found online (at https://www.icpsr.umich.edu/web/ICPSR/series/203/). The first wave of the study recruited non-institutionalized, English-speaking adults, aged 25 to 74 (Brim et al., 2019). All participants provided informed consent prior to participation. Participants completed a phone interview and a self-administered questionnaire that they returned by mail. A follow-up was conducted in 2004–2006 (MIDUS 2; $N = 4{,}963$), which also included a phone interview and a mailed survey. We used MIDUS 2 as the baseline for our analyses, as several PPWB facets were first assessed at that time point via a self-administered survey. We included all participants with available data on the PPWB measures to test the bifactor representation of the PPWB measures ($N = 4{,}039$). Our sample for the longitudinal analyses was derived from the subset of individuals who survived at least two years after the Wave 2 interview and for whom survival status was available ($N = 3{,}302$).[3]

[3]While this is a common practice in the field that is considered to offer a more rigorous test of the idea that psychological well-being contributes to physical health (and not the other way around; Trudel-Fitzgerald et al., 2021), we also conducted parallel analyses in a sample without this exclusion. Full results can be found in Tables S6 and S12. In MIDUS, in addition to the global factor, specific factors for positive affect and personal growth were both significantly related to lower mortality risk in this full sample. The results for HRS remained the same.

Participants in our final analytic sample were more likely to be female, older, White, and educated compared to those excluded (see Table S1).

Measures

PPWB

Four PPWB facets were assessed using previously validated measures. *Positive affect* was assessed by asking how much participants felt each of six positive emotions (e.g., cheerful; Mroczek & Kolarz, 1998) during the past 30 days. Responses were on a 5-point scale. *Purpose in life* (e.g., "I have a sense of direction and purpose in my life"), *personal growth* ("I have the sense that I have developed a lot as a person over time"), and *self-acceptance* ("In general, I feel confident and positive about myself") were assessed using seven items each, all on the same 7-point response scale (Ryff & Keyes, 1995). Each item was used as an indicator in the measurement model. Please see Table S2 for correlations among the average composites of all facets.

Mortality

We used mortality data available as of June 2018. Year and month of death were obtained through several sources including the National Death Index search, tracing, and closeout interviews as a part of MIDUS 3 protocols (Ryff et al., 2020).

Covariates

All covariates were collected via self-report at Wave 2. Sociodemographic covariates included age (years), sex (male and female), race/ethnicity (White, Black, and other [including Native American and Asian]), marital status (married, separated/divorced, widowed, and never married), educational attainment (<high school, high school or general education diploma [GED], some college, and ≥college), and total household income (based on quantiles of the score distribution in this sample). To account for physical health status at baseline, we assessed presence of major health conditions, including self-reported diagnosis or treatment of diabetes and stroke (in prior 12 months) and diagnosis of cancer or heart disease (ever/never). Experiences or treatment of diabetes and stroke were asked only with reference to the past 12 months. Following the prior MIDUS protocol (details in the supporting information), we defined depression status (depressed or not) based on participants' scores on measures of depressive affect and anhedonia (e.g., how long feelings of being sad, blue, or depressed lasted; Kessler et al., 1999). Biobehavioral covariates included body mass index (BMI; in kg/m^2) calculated from self-reported weight and height (for validity of these self-reports, see Chen et al., 2019), smoking status (never smoker, former smoker, and current smoker), alcohol consumption (<once a week, 1–2 times a week, and >3 times a week), and physical activity. For physical activity, participants reported the frequency with which they engaged in different types of leisure activities during summer and winter, separately, on a 5-point scale (recoded to range from 1 = *less than once a month* to 5 = *several times a week*). We created separate continuous scores for moderate and vigorous physical activity by averaging frequency of each type of leisure activities during summer and winter.

Cohort 2: HRS

Participants and procedure

We also used data from the HRS, an ongoing panel study with a nationally representative sample of adults aged ≥51 years who live in the United States. The data and full information about the study can be found online (at https://hrs.isr.umich.edu). The study began in 1992 and surveys participants every 2 years. All participants provided informed consent prior to participation. We used data from Wave 8 (conducted in 2006; $N = 18{,}469$) as our baseline, as the greatest number of PPWB measures was administered then. A random half of participants ($N = 9{,}568$) completed an enhanced face-to-face interview, while the other half completed the interview by telephone. Those who completed the face-to-face interview were invited to complete and return by mail a psychosocial survey including PPWB measures. Of note, although the other half also completed a psychosocial survey in 2008, it did not include the same PPWB items assessed in 2006; thus, we did not use data from this sample. To examine the bifactor representation of the PPWB measures, we included all participants with available data ($N = 7{,}695$). To examine the association of PPWB with mortality risk, we included participants who completed the self-administered survey in 2006, survived at least 2 years after that interview, and for whom survival status was available ($N = 7{,}209$). Participants included in versus excluded from our analytic sample were more likely to be younger, White, married, and educated (see Table S7).

Measures

PPWB

Positive affect, purpose in life, personal growth, and self-acceptance were assessed with the same items as those used in MIDUS. Note that items for the latter three used a 6-point response scale in HRS. Please see Table S9 for correlations among the average composites of all facets.

Mortality risk

We used mortality data provided by the RAND Center for the Study of Aging. Year and month of death were ascertained by the HRS via link with the National Death Index through 2020 (Weir, 2016).

Covariates

All covariates were assessed by self-report at Wave 8. They are similar to those used in MIDUS and were categorized identically unless otherwise indicated. Sociodemographic covariates included sex, age, race/ethnicity, marital status, educational attainment, and total wealth. To assess initial physical health status, we summed the number of major medical conditions reported as ever diagnosed, including diabetes, cancer, and heart disease/stroke. We assessed depression status using the validated eight-item Center for Epidemiological Studies Depression Scale (≥4 symptoms coded as probable depression; Steffick, 2000). Biobehavioral covariates included BMI, calculated from self-reported weight and height (for validity, see Meng et al., 2010), smoking status, alcohol consumption, and moderate and vigorous physical activity. For physical activity, participants indicated how frequently they engage in sports or activities that are moderately energetic or vigorous on a 5-point scale (recoded to range from 1 = *hardly ever or never* to 5 = *every day*).

Missing data

Missing values in covariates in each sample were minimal and were handled using multiple imputation (Rubin, 1977). Specifically, we used the *mice* package (Zhang, 2016) in R to create five imputed datasets and pooled results from analyses within each dataset. Missing values on PPWB items or mortality were not imputed. In the measurement model for PPWB items, full information maximum likelihood was used.

Statistical analyses

Measurement models were estimated using Mplus 8.1 (Muthén & Muthén, 1998–2017) and robust maximum likelihood estimator. We estimated a bifactor exploratory structural equation model (ESEM) with items directed to load on the global factor and on their respective specific factors (S factors). ESEM also allows each item to load on other S factors but to a minimal degree (i.e., cross-loadings are targeted to be as close to zero as possible). All factors were specified as orthogonal. Model fit was evaluated based on multiple criteria (see the supporting information; Howard et al., 2016; Marsh et al., 2009; Morin et al., 2020).

For each cohort, we derived factor scores from the bifactor model to examine factor associations with mortality risk over the follow-up period (MIDUS: 14 years, HRS: 15 years). To evaluate the distribution of covariates in relation to PPWB factors, we created tertiles of the global factor score in each cohort (based on the sample distribution of the score) and examined covariate levels across tertiles. We then fit Cox proportional hazards regression models to evaluate associations with mortality risk. Because participants were nested within families in both samples, our analysis-incorporated family-specific random effects using the *coxme* package (Therneau, 2022) in R. Hazard ratios (HRs) were calculated using time to event, defined as number of months from date of participants' baseline assessment to date of death or last interview. We tested the proportional hazard assumption based on scaled Schoenfeld residuals and confirmed it was not violated for any PPWB factors. To mitigate potential concerns about reverse causality whereby initial health status could affect self-reported PPWB, we included only deaths occurring ≥2 years after PPWB assessment. To evaluate the influence of covariates that could confound or mediate the PPWB-mortality association (Trudel-Fitzgerald et al., 2021), we ran four separate models (with the global and specific PPWB factors included simultaneously as predictors) with each set of covariates in successive models: (a) sociodemographic variables, (b) a + baseline physical health status, (c) b + baseline depression status, and (d) c + baseline health behaviors and related risk factors. Finally, in HRS, we also ran a post-hoc analysis to explore unexpected findings with the self-acceptance S-factor.

RESULTS

Measurement model

MIDUS

The bifactor ESEM fit the data well ($\chi^2 = 1{,}589.221$, $df = 226$, CFI $= 0.958$, TLI $= 0.934$, RMSEA $= 0.042$ [0.041, 0.044]), with all items significantly loading on the global factor (mean

$\lambda = 0.54$; see Table S2). The explained common variance (ECV; proportion of variance explained by the global factor divided by variance explained by the global and S factors) was 92%, suggesting the presence of a strong global factor (Reise, 2012). Indeed, once the shared variance was accounted for, only the S factor related to positive affect appeared to retain meaningful specificity (tentatively assuming a minimum of $\omega = .50$; Reise, Bonifay, & Haviland, 2013), suggesting there may be less uniqueness attributable to items in the other constructs ($\omega_{PA} = .89$, $\omega_{PIL} = .06$, $\omega_{PG} = .45$, and $\omega_{SA} = .38$). Table 1 presents characteristics of the analytic sample across baseline levels of the global factor (tertiled).

HRS

The bifactor ESEM fit the data well ($\chi^2 = 3{,}560.870$, $df = 226$, CFI = 0.947, TLI = 0.918, RMSEA = 0.044 [0.043, 0.045]). All items loaded significantly on the global factor (mean $\lambda = .52$; see Table S8), with S factors for positive affect and self-acceptance retaining substantial specificity ($\omega_{PA} = .90$, $\omega_{PIL} = .31$, $\omega_{PG} = .06$, and $\omega_{SA} = .52$). As in MIDUS, the high ECV (90%) suggested that the global factor accounted for much of the variance. Table 2 presents sample characteristics across baseline levels of the global factor (tertiled). In both cohorts, those with high (vs. low) global PPWB levels at baseline were more likely to be married and educated (≥college graduate), have higher income, and report better health conditions (e.g., lower odds of being diabetic).

PPWB factors and mortality risk

MIDUS

A total of 547 deaths (2,755 censored) occurred, with the last death documented in March 2018. The global factor was consistently associated with reduced mortality risk, even after adjusting for covariates (Table 3). For example, in fully adjusted models, each standard deviation (SD) increase in the baseline global factor was associated with 18% lower hazards of mortality. The positive affect S factor also showed a significant association with mortality risk in Models 1 and 2, although estimates were attenuated when baseline depression status or behavioral covariates were added. The S factors for purpose in life, personal growth, and self-acceptance were not significantly associated with mortality risk.

HRS

A total of 2,788 deaths occurred (4,421 censored) over follow-up, with deaths documented up through April 2021. Higher levels of the global factor score were associated with reduced mortality risk over the follow-up (Table 3). In the fully adjusted model, each SD increase in baseline global factor was associated with 13% lower hazards of mortality. Higher levels of purpose in life S factor were associated with reduced mortality risk across models. Holding all other covariates constant, each SD increase in purpose in life S factor was associated with 9% lower hazards of mortality. Somewhat unexpectedly, higher self-acceptance S-factor scores were associated with *greater* mortality risk; each SD increase in the self-acceptance S factor was

TABLE 1 MIDUS participant characteristics at baseline, across tertiles of the global PPWB factor (unimputed dataset)

Variables	Overall ($N = 4,039$)	Baseline PPWB global factor scores: Low ($n = 1,348$)	Medium ($n = 1,345$)	High ($n = 1,346$)
Sociodemographic characteristics				
Age *M* (*SD*)	56 (12)	55 (13)	56 (12)	57 (11)
Sex (male)	1,802 (45%)	604 (45%)	628 (47%)	570 (42%)
Race				
White	3,697 (92%)	1,228 (91%)	1,232 (92%)	1,237 (92%)
Black	150 (4%)	39 (3%)	59 (4%)	52 (4%)
Other	192 (5%)	81 (6%)	54 (4%)	57 (4%)
Marital status				
Married	2,864 (71%)	876 (65%)	966 (72%)	1,022 (76%)
Separated/divorced	561 (14%)	216 (16%)	166 (12%)	179 (13%)
Widowed	306 (8%)	117 (9%)	109 (8%)	80 (6%)
Never married	302 (8%)	136 (10%)	102 (8%)	64 (5%)
Education				
<High school	175 (5%)	111 (8%)	83 (6%)	51 (4%)
GED/high school graduate	848 (26%)	419 (31%)	358 (27%)	312 (23%)
Some college	680 (21%)	296 (22%)	269 (20%)	280 (21%)
≥College graduate	1,594 (48%)	520 (39%)	633 (47%)	702 (52%)
Total income (1,000 USD)	71 (60)	62 (54)	72 (59)	80 (66)
Baseline health conditions				
Diabetes	411 (10%)	171 (13%)	125 (9%)	115 (9%)
Cancer	43 (1%)	12 (1%)	16 (1%)	15 (1%)
Heart disease/stroke	788 (20%)	308 (23%)	259 (19%)	221 (16%)
Depression	418 (10%)	260 (19%)	106 (8%)	52 (4%)
Baseline biobehavioral risk factors				
Smoking status				
Never smoker	2,084 (52%)	646 (48%)	679 (51%)	759 (56%)
Former smoker	1,368 (34%)	447 (33%)	473 (35%)	448 (33%)
Current smoker	587 (15%)	255 (19%)	193 (14%)	139 (10%)
Alcohol (% < once a week)	1,991 (60%)	692 (63%)	656 (60%)	643 (58%)
Moderate activity *M* (*SD*)	3.97 (1.87)	3.69 (1.77)	3.97 (1.80)	4.24 (1.81)
Vigorous activity *M* (*SD*)	3.26 (1.87)	3.02 (1.78)	3.24 (1.86)	3.51 (1.95)
BMI *M* (*SD*)	27.90 (5.78)	28.67 (6.47)	27.59 (5.37)	27.46 (5.37)

Note: Percentages refer to the proportion of individuals with respective characteristics over individuals with non-missing values within each group.

TABLE 2 HRS participant characteristics at baseline, according to tertiles of the global factor (unimputed dataset)

Variables	Overall (N = 7,695)	Baseline scores on the global factor: Low (n = 2,565)	Medium (n = 2,566)	High (n = 2,564)
Sociodemographic characteristics				
Age *M* (*SD*)	68 (11)	69 (11)	68 (11)	66 (10)
Sex (male)	3,173 (41%)	1,062 (41%)	1,099 (43%)	1,012 (39%)
Race				
White	6,318 (83%)	2,125 (83%)	2,087 (81%)	2,106 (82%)
Black	986 (13%)	300 (12%)	355 (14%)	331 (13%)
Other	326 (4%)	118 (5%)	104 (4%)	104 (4%)
Marital status				
Married	5,020 (65%)	1,488 (58%)	1,736 (68%)	1,796 (70%)
Annulled/separated/divorced	933 (12%)	317 (12%)	304 (12%)	312 (12%)
Widowed	1,478 (19%)	648 (25%)	450 (18%)	380 (15%)
Never married	251 (3%)	105 (4%)	74 (3%)	72 (3%)
Education				
<High school	892 (17%)	388 (25%)	290 (16%)	214 (12%)
GED/high school graduate	1,848 (36%)	603 (39%)	664 (37%)	581 (31%)
Some college	1,199 (23%)	344 (22%)	391 (22%)	464 (25%)
≥College graduate	1,251 (24%)	224 (14%)	429 (24%)	598 (32%)
Total wealth (1,000 USD)	525 (120)	336 (942)	528 (1036)	710 (1530)
Baseline health conditions				
Diabetes	1,441 (19%)	637 (25%)	475 (19%)	329 (13%)
Cancer	1,098 (14%)	395 (16%)	369 (15%)	334 (13%)
Heart disease/stroke	2,000 (26%)	828 (32%)	643 (25%)	529 (21%)
Depression	1,087 (14%)	703 (27%)	253 (10%)	131 (5%)
Baseline biobehavioral risk factors				
Smoking status				
Never	3,270 (43%)	1,002 (40%)	1,098 (43%)	1,170 (46%)
Have smoked but not currently	3,284 (43%)	1,079 (43%)	1,124 (44%)	1,081 (43%)
Currently smoking	1,019 (14%)	442 (18%)	309 (12%)	268 (11%)
Alcohol (% < once a week)	5,078 (67%)	1,868 (73%)	1,695 (67%)	1,515 (60%)
Physical activity				
Moderate exercise (% ≥ once a week)	5,390 (71%)	1,493 (59%)	1,867 (73%)	2,030 (80%)
Vigorous exercise (% ≥ once a week)	2,341 (31%)	499 (20%)	803 (32%)	1,039 (41%)
BMI *M* (*SD*)	28.20 (5.91)	28.57 (6.55)	28.28 (5.60)	27.75 (5.49)

Note: Percentages refer to the proportion of individuals with respective characteristics over individuals with non-missing values within each group.

TABLE 3 Hazard ratios from Cox regression models of PPWB global and specific factors with mortality risk across follow-up.

Variables	Model 1 HR	Model 1 95% CI	Model 2 HR	Model 2 95% CI	Model 3 HR	Model 3 95% CI	Model 4 HR	Model 4 95% CI
MIDUS								
Global factor	0.75**	[0.64, 0.86]	0.78**	[0.66, 0.89]	0.79**	[0.67, 0.90]	0.83**	[0.71, 0.94]
Positive affect (S)	0.88*	[0.77, 0.99]	0.88*	[0.77, 0.99]	0.89*	[0.78, 1.00]	0.90	[0.79, 1.01]
Purpose in life (S)	0.92	[0.78, 1.05]	0.93	[0.79, 1.06]	0.93	[0.79, 1.06]	0.94	[0.81, 1.08]
Personal growth (S)	0.89	[0.77, 1.02]	0.91	[0.78, 1.04]	0.91	[0.78, 1.03]	0.91	[0.79, 1.04]
Self-acceptance (S)	0.96	[0.83, 1.08]	0.96	[0.83, 1.08]	0.96	[0.83, 1.08]	0.97	[0.84, 1.09]
HRS								
Global factor	0.83**	[0.78, 0.87]	0.85**	[0.80, 0.89]	0.86**	[0.81, 0.90]	0.89**	[0.85, 0.94]
Positive affect (S)	0.95**	[0.90, 0.99]	0.96	[0.92, 1.00]	0.97	[0.92, 1.02]	0.99	[0.94, 1.04]
Purpose in life (S)	0.88**	[0.83, 0.93]	0.89**	[0.84, 0.94]	0.89**	[0.84, 0.94]	0.91**	[0.85, 0.96]
Personal growth (S)	1.02	[0.97, 1.07]	1.02	[0.97, 1.08]	1.02	[0.97, 1.08]	1.02	[0.97, 1.08]
Self-acceptance (S)	1.10**	[1.05, 1.15]	1.09**	[1.04, 1.14]	1.10**	[1.04, 1.15]	1.08**	[1.03, 1.13]

Note: Cases/person-time = 547/349,270 and 2,787/954,298 for MIDUS and HRS, respectively. In all models, the global factor and four S-factors were entered simultaneously. Full results are available in Tables S5 and S11. Model 1: adjusted for sex, age, race, marital status, education, and income; Model 2: additionally adjusted for baseline physical health status; Model 3: additionally adjusted for baseline depressive status; Model 4: additionally adjusted for BMI, smoking status, alcohol use, and physical activity.

Abbreviations: CI, confidence intervals; HR, hazard ratio; (S), specific factors.

*$p < .05$.**$p < .01$.

associated with 10% higher hazards of mortality. Higher levels of positive affect S factor were associated with lower mortality risk only in the least restrictive model (i.e., adjusting only for sociodemographic characteristics), while personal growth S factor showed no significant association across models.

Additional analyses in HRS

To probe the unexpected association between self-acceptance S factor and mortality risk, we examined the relation of self-acceptance and mortality risk without accounting for its overlap with other PPWB facets whatsoever. When an average composite of self-acceptance was included as an independent predictor of mortality risk, it was associated with *lower* mortality risk (HRs ranging from 0.91 to 0.98 across models; see Table S10[4]). But when included in the model simultaneously with other PPWB factors, self-acceptance was associated with higher mortality risk, suggesting that it is the unique part of self-acceptance (vs. what is shared with other facets) that may have adverse effects on health.

DISCUSSION

Across two US cohort studies differing on multiple characteristics, we found that the global factor representing shared variance across different PPWB facets was robustly associated with reduced mortality risk across the 14–15 years of follow-up. Even after adjusting for sociodemographic and health-related covariates as well as depression status, higher global factor scores were associated with 13–18% lower mortality risk. On the other hand, we did not find consistent associations with similar S factors across the samples. Overall, our findings suggest that (a) the global factor may be more than a statistical artifact that rather captures a meaningful construct and (b) what each PPWB facet uniquely captures may not be a key driver of the putative health benefits of PPWB. Findings with specific facets did not generalize across the two cohorts.

By directly examining the relationship between the overlap across different PPWB facets (i.e., shared variance as captured by the global factor) and mortality risk, this study extends previous findings on how single PPWB facets such as positive affect or purpose in life relate to mortality risk (Hill & Turiano, 2014; Moskowitz et al., 2008). Further, our approach helps extend Boylan et al.'s (2022) findings that adjusting for multiple PPWB facets changed the relationship between a given PPWB facet and mortality risk, to suggest more directly that multiple PPWB facets might be linked with better physical health partly due to their common variance.

Examining both the shared and unique aspects of PPWB and their impact on health outcomes has important theoretical and practical implications for the field. First, it offers a more nuanced approach to interpreting varied health-protective effects of different PPWB facets observed in the existing literature (Trudel-Fitzgerald et al., 2021). Specifically, evidence supporting the health relevance of a particular facet should not be overinterpreted to indicate the facet's unique effects. Our findings suggest the importance of considering the extent that any given facet's apparent salutary effects may be due to the elements that are common to the overarching PPWB construct and shared across facets. Likewise, evidence challenging the health relevance of a particular facet will need to be carefully considered. To the extent that the facet falls under the umbrella of PPWB, it may have features that are in fact relevant to physical health. Relatedly, consideration of shared and unique effects can also help paint a more holistic view of the mechanistic pathways underlying the association of PPWB with health outcomes. When focusing on the role of a single facet, researchers may inadvertently emphasize specificity in the putative mechanism underlying its effects on health, potentially offering a misleading perspective. For instance, separate investigations have found that various PPWB facets (e.g., purpose in life, Hill et al., 2019; positive affect, Pressman et al., 2020) are related to physical activity, challenging the idea that it represents a mechanism specific to a single facet. Overall, researchers may want to carefully think about the shared variance across PPWB facets when conceptualizing or empirically examining the role of a specific facet.

In terms of practical applications, understanding the higher order PPWB construct can guide assessments when time and resources are limited (VanderWeele et al., 2020). For

[4]Results for the independent effects of other PPWB facets are also included.

example, in the absence of clear evidence that a specific facet uniquely influences the desired health outcome, assessing a global construct might be useful. Similarly, interventions targeting multiple facets (e.g., multi-component interventions; Heintzelman et al., 2020) might be informative in such cases. In fact, targeting a specific facet requires caution considering that an intervention designed to change a specific facet of PPWB (e.g., positive affect) may have rather focused effects, not necessarily influencing other facets (e.g., Hill et al., 2021; Peters et al., 2013). That said, evidence for the unique role of a specific facet (e.g., purpose in life in our HRS analyses) in investigations that directly account for the commonalities across PPWB would provide powerful rationale to consider it as an intervention target.

One notable aspect of our findings is that not all S factors retained meaningful specificity when accounting for the shared variance. While weakly defined S factors do not necessarily challenge the utility of a bifactor representation (see Morin, in press), interpreting their (lack of) associations with mortality requires careful attention if only a few indicators defined those S factors. That said, the high proportion of the variance explained by the general factor (combined with a high percentage of uncontaminated correlations; Rodriguez et al., 2016) across the two samples also suggests the data may essentially be considered unidimensional. Practically, then, especially if investigators are primarily interested in the effects of the common variance on health outcomes, they could employ a simpler model (see Reise, Scheines, et al., 2013, for deciding if data are "unidimensional enough"). Of course, some questions will simply require attention to multiple specific factors (e.g., is there a meaningful threshold at which protective effects occur and should that threshold be reached by multiple specific factors?).

A major strength of our research was that we found support for reduced mortality risk associated with a global PPWB factor across two cohorts that differed in many aspects, including participant characteristics (e.g., mean age at baseline) and mortality rate. However, we also noted differences regarding associations of the S factors with mortality risk across samples. These differences could be due to differences in the samples (e.g., PPWB facets play a more unique role in the older HRS participants), power to detect effects (HRS had more deaths), differences in the methods used to measure PPWB (use of different anchors), or random variation. One finding observed only in HRS was that the self-acceptance S factor was associated with *higher* mortality risk. Our post hoc analyses suggested that variance uniquely shared among items assessing self-acceptance may be what has adverse health implications. For example, a unique feature these items capture that may be maladaptive relates to social comparison tendencies (e.g., "when I compare myself to friends and acquaintances, it makes me feel good about who I am"). Nevertheless, future research will need to establish the replicability of this unique association.

Our study has several limitations, including both samples exclusively consisting of adults living in the United States. Future work should consider using data from other countries to assess if these findings replicate conceptually (depending on which measures of PPWB are appropriate for each culture). Moreover, we examined only one outcome, mortality risk. Considering associations of a global PPWB factor with different health outcomes will help ascertain the generalizability of our conclusion about the health implications of PPWB. It is also possible that more consistent unique effects of PPWB facets will emerge in relation to other health outcomes. Considering multiple outcomes will provide a more precise picture of if and when specific factors versus a global factor may be most health relevant. Relatedly, exploring unique effects of other PPWB facets (e.g., life satisfaction; Collins et al., 2009) that have been linked to better health will be important. Overall, investigations drawing on additional PPWB facets and health outcomes will help develop a comprehensive understanding of when and which aspects of PPWB facets are health protective.

Additionally, reliance on observational studies limits our ability to make causal claims regarding the links between PPWB and mortality. However, we used several strategies to strengthen causal inference. We reduced concerns about reverse causation (i.e., declines in health before death shaping PPWB) by considering only deaths that occurred ≥2 years after the baseline assessment (Trudel-Fitzgerald et al., 2021). Further, we adjusted for known potential confounders and covariates that might be on the pathway linking PPWB to mortality. We also controlled for baseline depression status and found effects of the global factor remained even after accounting for depression status. Consistent with other studies (Rozanski et al., 2019), our findings suggest measures of PPWB reflect more than simply the absence of depression.

This research offers the first explicit test of the hypothesis that the shared variance across multiple PPWB facts (as captured by our global PPWB factor) has a robust association with risk of all-cause mortality. Our work reinforces the utility of using a bifactor modeling approach not only for conceptualizing PPWB (Chen et al., 2013) but also for synthesizing and gaining greater insight into previous findings examining the health relevance of a single PPWB facet. With robust evidence suggesting the health benefits of PPWB, a strong case can be made for the role of PPWB as a potential target for interventions aimed at improving physical health.

CONFLICT OF INTEREST STATEMENT

The authors disclose no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data and full information about the associated studies can be found online (at https://www.icpsr.umich.edu/web/ICPSR/series/203 and https://hrs.isr.umich.edu/). The authors do not have the right to post the data online.

ETHICS STATEMENT

All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2013.

ORCID

Yoobin Park https://orcid.org/0000-0002-2796-3523
Anne-Josee Guimond https://orcid.org/0000-0002-1690-6312

REFERENCES

Boehm, J. K., & Kubzansky, L. D. (2012). The heart's content: The association between positive psychological well-being and cardiovascular health. *Psychological Bulletin*, *138*(4), 655–691. https://doi.org/10.1037/a0027448

Boehm, J. K., Trudel-Fitzgerald, C., Kivimaki, M., & Kubzansky, L. D. (2015). The prospective association between positive psychological well-being and diabetes. *Health Psychology*, *34*(10), 1013–1021. https://doi.org/10.1037/hea0000200

Boylan, J. M., Tompkins, J. L., & Krueger, P. M. (2022). Psychological well-being, education, and mortality. *Health Psychology*, *41*(3), 225–234. https://doi.org/10.1037/hea0001159

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*(5), 574–579. https://doi.org/10.1097/psy.0b013e3181a5a7c0

Brim, O. G., Baltes, P. B., Bumpass, L. L., Cleary, P. D., Featherman, D. L., Hazzard, W. R., Kessler, R. C., Lachman, M. E., Markus, H. R., Marmot, M. G., Rossi, A. S., Ryff, C. D., & Shweder, R. A. (2019). *Midlife in* *the United States (MIDUS 1), 1995–1996 (ICPSR 2760)*. Inter-University Consortium for Political and Social Research. https://doi.org/10.3886/ICPSR02760.v19

Chen, F. F., Jing, Y., Hayes, A., & Lee, J. M. (2013). Two concepts or two approaches? A bifactor analysis of psychological and subjective well-being. *Journal of Happiness Studies*, *14*(3), 1033–1068. https://doi.org/10.1007/s10902-012-9367-x

Chen, Y., Kubzansky, L. D., & VanderWeele, T. J. (2019). Parental warmth and flourishing in mid-life. *Social Science & Medicine*, *220*, 65–72. https://doi.org/10.1016/j.socscimed.2018.10.026

Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine*, *70*(7), 741–756. https://doi.org/10.1097/PSY.0b013e31818105ba

Collins, A. L., Glei, D. A., & Goldman, N. (2009). The role of life satisfaction and depressive symptoms in all-cause mortality. *Psychology and Aging*, *24*(3), 696–702. https://doi.org/10.1037/a0016777

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*(3), 542–575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well-being contributes to health and longevity: Health benefits of happiness. *Applied Psychology: Health and Well-Being*, *3*(1), 1–43. https://doi.org/10.1111/j.1758-0854.2010.01045.x

Diener, E., Pressman, S. D., Hunter, J., & Delgadillo-Chase, D. (2017). If, why, and when subjective well-being influences health, and future needed research. *Applied Psychology: Health and Well-Being*, *9*(2), 133–167. https://doi.org/10.1111/aphw.12090

Disabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2016). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological Assessment*, *28*(5), 471–482. https://doi.org/10.1037/pas0000209

Heintzelman, S. J., Kushlev, K., Lutes, L. D., Wirtz, D., Kanippayoor, J. M., Leitner, D., Oishi, S., & Diener, E. (2020). ENHANCE: Evidence for the efficacy of a comprehensive intervention program to promote subjective well-being. *Journal of Experimental Psychology: Applied*, *26*(2), 360–383. https://doi.org/10.1037/xap0000254

Hernandez, R., Bassett, S. M., Boughton, S. W., Schuette, S. A., Shiu, E. W., & Moskowitz, J. T. (2018). Psychological well-being and physical health: Associations, mechanisms, and future directions. *Emotion Review*, *10*(1), 18–29. https://doi.org/10.1177/1754073917697824

Hill, P. L., Burrow, A. L., & Allemand, M. (2021). Moving beyond promoting 'happiness' in gerontology interventions. *Age and Ageing*, *50*(1), 62–64. https://doi.org/10.1093/ageing/afaa226

Hill, P. L., Edmonds, G. W., & Hampson, S. E. (2019). A purposeful lifestyle is a healthful lifestyle: Linking sense of purpose to self-rated health through multiple health behaviors. *Journal of Health Psychology*, *24*(10), 1392–1400. https://doi.org/10.1177/1359105317708251

Hill, P. L., & Turiano, N. A. (2014). Purpose in life as a predictor of mortality across adulthood. *Psychological Science*, *25*(7), 1482–1486. https://doi.org/10.1177/0956797614531799

Howard, J., Gagné, M., Morin, A. J. S., & van den Broeck, A. (2016). Motivation profiles at work: A self-determination theory approach. *Journal of Vocational Behavior*, *95–96*, 74–89. https://doi.org/10.1016/j.jvb.2016.07.004

Howell, R. T., Kern, M. L., & Lyubomirsky, S. (2007). Health benefits: Meta-analytically determining the impact of well-being on objective health outcomes. *Health Psychology Review*, *1*(1), 83–136. https://doi.org/10.1080/17437190701492486

Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior*, *40*(3), 208–230. https://doi.org/10.2307/2676349

Marsh, H. W., Lüdtke, O., Trautwein, U., & Morin, A. J. S. (2009). Classical latent profile analysis of academic self-concept dimensions: Synergy of person- and variable-centered approaches to theoretical models of self-concept. *Structural Equation Modeling: A Multidisciplinary Journal*, *16*(2), 191–225. https://doi.org/10.1080/10705510902751010

Martín-María, N., Miret, M., Caballero, F. F., Rico-Uribe, L. A., Steptoe, A., Chatterji, S., & Ayuso-Mateos, J. L. (2017). The impact of subjective well-being on mortality: A meta-analysis of longitudinal studies in the general population. *Psychosomatic Medicine*, *79*(5), 565–575. https://doi.org/10.1097/PSY.0000000000000444

Meng, H. D., He, X., & Dixon, D. (2010). Self-reported versus measured height and weight in the health and retirement study. *Journal of the American Geriatrics Society*, *58*(2), 412–413. https://doi.org/10.1111/j.1532-5415.2009.02713.x

Morin, A. J. S. (in press). Exploratory structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (2nd ed.). Guilford Press.

Morin, A. J. S., McLarnon, M. J. W., & Litalien, D. (2020). Mixture modeling for organizational behavior research. In Y. Griep & S. Hansen (Eds.), *Handbook on the temporal dynamics of organizational behavior* (pp. 351–379). Edward Elgar Publishing. https://doi.org/10.4337/9781788974387.00031

Moskowitz, J. T., Epel, E. S., & Acree, M. (2008). Positive affect uniquely predicts lower risk of mortality in people with diabetes. *Health Psychology*, *27*(1, Suppl), S73–S82. https://doi.org/10.1037/0278-6133.27.1.s73

Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology*, *75*(5), 1333–1349. https://doi.org/10.1037/0022-3514.75.5.1333

Muthén, L. K., & Muthén, B. O. (1998). *Mplus user's guide*. Muthén & Muthén.

Ng, R., Allore, H. G., & Levy, B. R. (2020). Self-acceptance and interdependence promote longevity: Evidence from a 20-year prospective cohort study. *International Journal of Environmental Research and Public Health*, *17*(16), 5980. https://doi.org/10.3390/ijerph17165980

Park, C. L., Kubzansky, L. D., Chafouleas, S. M., Davidson, R. J., Keltner, D., Parsafar, P., Conwell, Y., Martin, M. Y., Hanmer, J., & Wang, K. H. (2023). Emotional well-being: What it is and why it matters. *Affective Science*, *4*, 10–20. https://doi.org/10.1007/s42761-022-00163-0

Peters, M. L., Meevissen, Y. M. C., & Hanssen, M. M. (2013). Specificity of the best possible self intervention for increasing optimism: Comparison with a gratitude intervention. *Terapia Psicologica*, *31*(1), 93–100. https://doi.org/10.4067/S0718-48082013000100009

Petrie, K. J., Pressman, S. D., Pennebaker, J. W., Øverland, S., Tell, G. S., & Sivertsen, B. (2018). Which aspects of positive affect are related to mortality? Results From a General Population Longitudinal Study. *Annals of Behavioral Medicine*, *52*(7), 571–581. https://doi.org/10.1093/abm/kax018

Pressman, S. D., Petrie, K. J., & Sivertsen, B. (2020). How strongly connected are positive affect and physical exercise? Results from a large general population study of young adults. *Clinical Psychology in Europe*, *2*(4), e3103. https://doi.org/10.32872/cpe.v2i4.3103

Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, *47*(5), 667–696. https://doi.org/10.1080/00273171.2012.715555

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, *95*(2), 129–140. https://doi.org/10.1080/00223891.2012.725437

Reise, S. P., Scheines, R., Widaman, K. F., & Haviland, M. G. (2013). Multidimensionality and structural coefficient bias in structural equation modeling: A bifactor perspective. *Educational and Psychological Measurement*, *73*(1), 5–26. https://doi.org/10.1177/0013164412449831

Rodriguez, A., Reise, S. P., & Haviland, M. G. (2016). Applying bifactor statistical indices in the evaluation of psychological measures. *Journal of Personality Assessment*, *98*(3), 223–237. https://doi.org/10.1080/00223891.2015.1089249

Rozanski, A., Bavishi, C., Kubzansky, L. D., & Cohen, R. (2019). Association of optimism with cardiovascular events and all-cause mortality: A systematic review and meta-analysis. *JAMA Network Open*, *2*(9), e1912200. https://doi.org/10.1001/jamanetworkopen.2019.12200

Rubin, D. B. (1977). Formalizing subjective notions about the effect of nonrespondents in sample surveys. *Journal of the American Statistical Association*, *72*(359), 538–543. https://doi.org/10.1080/01621459.1977.10480610

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D., Almeida, D. M., Ayanian, J., Binkley, N., Carr, D. S., Coe, C., Davidson, R., Grzywacz, J., Karlamangla, A., Krueger, R., Lachman, M., Love, G., Mailick, M., Mroczek, D., Radler, B., Seeman, T., Sloan, R., Thomas, D., Weinstein, M., & Williams, D. R. (2020). *Midlife in the United States: Core sample mortality data, 2016 (ICPSR 37237)*. Inter-university Consortium for Political and Social Research.

Ryff, C. D., & Singer, B. H. (2006). Best news yet on the six-factor model of well-being. *Social Science Research*, *35*(4), 1103–1119. https://doi.org/10.1016/j.ssresearch.2006.01.002

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Smith, G. T., Atkinson, E. A., Davis, H. A., Riley, E. N., & Oltmanns, J. R. (2020). The general factor of psychopathology. *Annual Review of Clinical Psychology*, *16*, 75–98. https://doi.org/10.1146/annurev-clinpsy-071119-115848

Springer, K. W., & Hauser, R. M. (2006). An assessment of the construct validity of Ryff's Scales of Psychological Well-Being: Method, mode, and measurement effects. *Social Science Research*, *35*(4), 1080–1102. https://doi.org/10.1016/j.ssresearch.2005.07.004

Steffick, D. E. (2000). *Documentation on affective functioning measures in the health and retirement study*. University of Michigan, Survey Research Center. https://hrs.isr.umich.edu/publications/biblio/5411

Suls, J. (2018). Toxic affect: Are anger, anxiety, and depression independent risk factors for cardiovascular disease? *Emotion Review*, *10*(1), 6–17. https://doi.org/10.1177/1754073917692863

Sutin, A. R., Stephan, Y., & Terracciano, A. (2018). Psychological well-being and risk of dementia. *International Journal of Geriatric Psychiatry*, *33*(5), 743–747. https://doi.org/10.1002/gps.4849

Therneau, T. M. (2022). coxme: Mixed effects cox models. R Package Version 2.2-18.1, https://CRAN.R-project.org/package=coxme

Trudel-Fitzgerald, C., Kubzansky, L. D., & VanderWeele, T. J. (2021). A review of psychological well-being and mortality risk: Are all dimensions of psychological well-being equal? In M. T. Lee, L. D. Kubzansky, & T. J. VanderWeele (Eds.), *Measuring well-being: Interdisciplinary perspectives from the social sciences and the humanities* (pp. 136–188). Oxford University Press. https://doi.org/10.1093/oso/9780197512531.003.0006

van Bork, R., Epskamp, S., Rhemtulla, M., Borsboom, D., & van der Maas, H. L. J. (2017). What is the p -factor of psychopathology? Some risks of general factor modeling. *Theory & Psychology*, *27*(6), 759–773. https://doi.org/10.1177/0959354317737185

VanderWeele, T. J., Trudel-Fitzgerald, C., Allin, P., Farrelly, C., Fletcher, G., Frederick, D. E., Hall, J., Helliwell, J. F., Kim, E. S., Lauinger, W. A., Lee, M. T., Lyubomirsky, S., Margolis, S., McNeely, E., Messer, N., Tay, L., Viswanath, V., Węziak-Białowolska, D., & Kubzansky, L. D. (2020). Current recommendations on the selection of measures for well-being. *Preventive Medicine*, *133*, 106004. https://doi.org/10.1016/j.ypmed.2020.106004

Weir, D. R. (2016). *Validating mortality ascertainment in the health and retirement study*. University of Michigan, Survey Research Center. https://hrs.isr.umich.edu/publications/biblio/9022

Willroth, E. C., Pfund, G. N., McGhee, C., & Rule, P. (2023). Well-being as a protective factor against cognitive decline and dementia: A review of the literature and directions for future research. *The Journals of Gerontology: Series B*, *78*(5), 765–776. https://doi.org/10.1093/geronb/gbad020

Zaslavsky, O., Rillamas-Sun, E., Woods, N. F., Cochrane, B. B., Stefanick, M. L., Tindle, H., Tinker, L. F., & LaCroix, A. Z. (2014). Association of the selected dimensions of eudaimonic well-being with healthy survival to 85 years of age in older women. *International Psychogeriatrics*, *26*(12), 2081–2091. https://doi.org/10.1017/s1041610214001768

Zhang, Z. (2016). Multiple imputation with multivariate imputation by chained equation (MICE) package. *Annals of Translational Medicine*, *4*(2), 30. https://doi.org/10.3978/j.issn.2305-5839.2015.12.63

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Park, Y., Guimond, A.-J., Crosswell, A. D., & Kubzansky, L. D. (2024). Associations of global and specific components of positive psychological well-being with mortality risk: Findings from two cohort studies. *Applied Psychology: Health and Well-Being*, 1–17. https://doi.org/10.1111/aphw.12576