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Chronological and subjective age differences in flourishing mental health and major depressive episode

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Mental health is more than the absence of psychopathology, but few studies use positive mental health along with a measure of past year major depressive episode (MDE). This study addresses this gap by investigating the association of MDE and flourishing mental health (FMH) with chronological age and subjective (felt and ideal) age. Data are from the Midlife in the United States random digit dialing sample of adults ages 25 to 74, collected in 1995 ($n = 3032$). Rates of MDE were lowest, and FMH highest, among the three oldest age cohorts (45–54, 55–64, 65–74 years). Subjective age was linked with chronological age; with age, adults tend to feel younger, and want to be an age that is younger, than their actual age. As predicted by the model of subjective age as an adaptive strategy, feeling younger was related to a lower risk of MDE and a higher risk of FMH. However, wanting to be younger was related to a lower risk of FMH and unrelated to MDE.

Keywords: depression; mental health measures; epidemiology (mental health)

Introduction

Depressive symptoms and diagnosis of depression tend to decline during the first three quarters of adulthood, from young, middle, to the first phase of older adulthood (Gatz & Hurwicz, 1990; Jorm, 2000). Many studies reveal an increase, however, in depressive symptoms and major depressive episode (MDE) in late-life, starting around the age of 75 (Blazer, Burchett, Service, & George, 1991; Haynie, Berg, Johansson, Gatz, & Zarit, 2001; Kessler, Foster, Webster, & House, 1992; Mirowsky & Ross, 1992, 1999; Newman, 1989). The conception of mental health as the absence of psychopathology has been a useful approach to the study of risks associated with age. However, mental health is more than the absence of psychopathology, a viewpoint consistent with successful aging (Rowe & Kahn, 1998). Currently, mental health is positively defined as the presence of emotional well-being in combination with high levels of psychological and social functioning (Keyes, 2002, 2005a).

Findings from a diverse set of studies and populations support Keyes' (2002, 2005a) argument for the dual continua model: one continuum indicating the presence and absence of positive mental health, the other indicating the presence and absence of mental illness symptoms such as depression and anxiety (Alterman, et al., 2010; Keyes, et al., 2008; Keyes, 2009a; Westerhof & Keyes, 2008, 2010). In the Midlife in the United States (MIDUS) sample, for example, the latent factors of mental illness – measured with past year MDE, panic attacks and generalized anxiety disorder – and mental health correlated ($r = -0.53$), meaning only 28.1% of their variance is shared (Keyes, 2005a).

There are three implications of the dual continua model for gerontology. First, better outcomes are achieved when individuals have higher levels of positive mental health, in addition to the absence of mental disorders such as depression. Second, although individuals free of a mental disorder function better than those with one, level of mental health still distinguishes level of functioning among individuals with and without a mental illness (e.g., MDE) on an array of outcomes (Keyes, 2002, 2004, 2005a, 2005b, 2007, 2009b). Third, mental illness such as MDE and positive mental health do not share all causes in common (Keyes, 2007; Ryff et al., 2006). Consequently, while depression may decrease through the first three quarters of the adult lifespan, this does not mean that good mental health also increases within the same age range.

To date, there has been no research on the epidemiology of mental health as a complete state in the US population. Given the need to understand the overall health and well-being of the aging population, this article investigates age-cohort differences in MDE and flourishing mental health (FMH). We also investigate whether subjective age explains additional variance in MDE and FMH.

Subjective age and lifespan development

Adults tend to feel younger than their chronological age, and this discrepancy increases with chronological age (Barak & Stern, 1986; Goldsmith & Heiens, 1992;

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Montepare & Lachman, 1989; Uotinen, Suutama, & Ruoppila, 2003; Westerhof, 2008; Westerhof, Barrett, & Steverink, 2003). Compared with 'felt' age, 'ideal' age – i.e., the age one would most want to be – is less often studied. Existing studies show that adults want to be younger than their actual age, and this discrepancy also increases with chronological age (Barak, 2009; Öberg & Tornstam, 2001; Uotinen, 1998).

Feeling young is considered a self-enhancing strategy in cultures that stigmatize growing old; feeling younger should therefore contribute to well-being and functioning in such contexts (Barak & Stern, 1986; Hubley & Hultsch, 1994, 1996; Levy, Slade, & Kasl, 2002; Levy, Slade, Kunkel, et al., 2002; Logan, Ward, & Spitze, 1992; Montepare, 1996; Sneed & Whitbourne, 2003; Staats, 1996; Westerhof & Barrett, 2005). Cross-sectional and longitudinal studies have found that physical, psychological, and social functioning and health increase (Barak & Stern, 1986; Demakakos, Gjonca, & Nazroo, 2007; Infurna, Gerstorf, Robertson, Berg, & Zarit, 2010), and risk of mortality decreases (Uotinen, Rantanen, & Suutama, 2005) the more adults feel younger than their age. It is not clear whether wanting to be younger than one's actual age is self-enhancing. Instead, evidence reveals that as the discrepancy of ideal age ***decreases*** (i.e., wanting to be an age that is closer to one's actual age), mental health increases (Uotinen et al., 2003).

The pattern of increasing discrepancies between felt and ideal age as well as their distinct relations to health and functioning can be interpreted from lifespan theories. In short, subjective age has been conceived of as an adaptive strategy in growing older. Heckhausen and Schulz (1998) view it as a compensatory strategy in terms of the maintenance of control across the lifespan, while Sneed and Whitbourne (2003) argue that subjective age is as an assimilative strategy in terms of lifespan identity processes. Research connecting felt and ideal age with health outcomes suggests that feeling younger with age may indeed act as a compensatory strategy, while wanting to be an age that is younger than one's actual age may operate as a maladaptive identity assimilative strategy. Together, feeling younger than one's age (i.e., an increasing discrepancy of felt age from chronological age) and wanting to be an age that is closer to one's age (i.e., a decreasing discrepancy of ideal age from chronological age) should predict better mental health.

Current study

In this study, we investigate four questions, using data from adults between 25 and 74 years in the MIDUS sample (Brim, Ryff, & Kessler, 2004). First, does level of MDE decrease with chronological age, as found in previous studies, and does FMH follow another pattern, increasing with chronological age, as predicted by the two-continua model? Second, do felt and ideal age correlate with chronological age, such that discrepancies between felt and ideal age increase with chronological age? Third, do felt and ideal age correlate with FMH and MDE as predicted, with the age discrepancy of felt age correlating positively with FMH and negatively with MDE, and the ideal age discrepancy correlating negatively with FMH and positively with MDE? Fourth, does felt or ideal age explain additional variance in FMH and MDE beyond chronological age?

Methods

Sample

Data are from the national random digit dialing (NRDD) portion of the MIDUS study (Brim et al., 2004). The MIDUS survey complied with Institutional Review Board standards, and interviewers read a standard informed consent protocol at the beginning of the telephone interview. Adults who agreed to participate were administered a computer-assisted telephone interview lasting 45 to 60 minutes on average and were then mailed two questionnaire booklets requiring about 1.5 h on average to complete. All participants were offered $20 and a copy of a final study monograph as incentives for participation. Field procedures lasted approximately 13 months beginning in 1994 and concluding in 1995. With a response rate of 70% for the telephone phase and 87% for the self-administered questionnaire phase, the overall response rate was 61% (i.e., 0.70×0.87) with a sample size of 3032 respondents.

Table 1 reports the demographic characteristics of the sample when unweighted and when weighted. The sample weight adjusts for unequal probabilities of household selection and unequal probabilities of respondent selection within households. Moreover, the sample weight post-stratifies the sample to match the October 1995 Current Population Survey proportions of adults on the basis of age, gender, education, marital status, race, as well as the proportions of adults residing in metropolitan and non-metropolitan areas as well as the regions (Northeast, Midwest, South, and West) of the United States.

Measures

Age variables

Chronological age is coded into five age-cohorts – ages 25–34, 35–44, 45–54, 55–64, and ages 65–74. Felt age was measured by asking respondents the following: 'Many people feel older or younger than they actually are. What age do you feel most of the time?' Ideal age was measured by asking the following: 'Now imagine you could be any age. What age would you most like to be?' We used the difference of felt and ideal age with chronological age as the discrepancy measures. Higher scores indicated that participants felt younger or wanted to be younger than their chronological age.

Table 1. Sample characteristics of the MIDUS[a] sample (N = 3032).

Demographic variable	Breakdown	Unweighted %	Weighted %
Age			
	25–34	20.9	26.1
	35–44	24.2	27.7
	45–54	24.0	19.1
	55–64	19.8	15.2
	65–74	11.1	11.8
Gender			
	Males	48.5	43.5
	Females	51.5	56.5
Education			
	12 years or less	39.2	51.5
	13 years or more	60.8	48.5
Marital status			
	Married	64.1	68.1
	All others	35.9	31.9
Race			
	Caucasian	87.8	83.8
	African American	6.8	11.4
	All other races	4.4	5.7

Notes: Sample weight consists of a post-stratification component to match the sociodemographic distribution of the US based on the October 1995 Current Population Survey. The average age of the unweighted sample is $M = 47.0$ (SD = 13.1) and, when the sample is weighted, $M = 45.3$ (SD = 13.5).
[a]MIDUS refers to the 'Midlife in the United States' Survey.

Major depressive episode

The MIDUS study used DSM-IV-TR criteria (American Psychiatric Association, 2000) of MDE, which were operationalized by the Composite International Diagnostic Interview Short Form (CIDI-SF) scale (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). Studies have shown that the CIDI-SF has excellent diagnostic sensitivity and diagnostic specificity as compared with diagnoses based on the full CIDI in the National Comorbidity Study (Kessler, DuPont, Berglund, & Wittchen, 1999). During the telephone interview, the CIDI-SF was used to assess whether respondents exhibited symptoms indicative of MDE during the past 12 months.

Mental health

Mental health was measured with self-reports on emotional well-being, psychological functioning, and social functioning. Emotional well-being was measured with a positive affect scale and a question on life satisfaction. In the self-administered questionnaire, respondents indicated how much of the time during the past 30 days – 'all,' 'most', 'some', 'a little', or 'none of the time' – they felt six kinds positive affect, a scale that was created for use in the MIDUS (Mroczek & Kolarz, 1998). The positive affect items are feeling (1) cheerful, (2) in good spirits, (3) extremely happy, (4) calm and peaceful, (5) satisfied, and (6) full of life. The mean score across all six affects was computed with a higher score indicating more positive affect. The internal reliability of the positive affect scale is 0.91. To measure life satisfaction, respondents rated 'their life overall these days' on a scale from 0 to 10, where 0 meant the 'worst possible life overall' and 10 meant 'the best possible life overall' (Cantril, 1965).

To collect self-reports of psychological functioning and social functioning, respondents completed the six scales of Ryff's (1989) and Ryff and Keyes (1995) model of psychological well-being, and the five scales of Keyes' (1998) model of social well-being, respectively. The scales used in MIDUS were short forms of the original scales, consisting of three items per scale with a balance of positive and negative items. Respondents indicated whether they 'agreed' or 'disagreed' 'strongly', 'moderately', or 'slightly' with an item describing how they functioned. Negative items were reverse-coded. The mean score for each of the eleven scales was computed with a higher score indicating better psychological or social functioning. The internal reliability was 0.81 for the combined 18 item scale of psychological well-being and 0.81 for the combined 15 item scale of social well-being.

According to the criteria outlined by Keyes (2002, 2005a, 2007), individuals had *FMH* if they reported a high level on the positive affect scale or the life satisfaction item in combination with a high level on six of the 11 scales of positive functioning (i.e., any of the six psychological, or any of the five social, well-being scales). Before applying the proposed diagnostic criteria, each scale of emotional, psychological, and social well-being was divided by the number of constituent items, standardized, and tertiles were computed. The statistical tertile defines the threshold for a 'high' (i.e., upper tertile) level subjective well-being. Those with FMH were coded as 1, all other as 0.

Control variables

Respondents characteristics include gender, household income, race (white versus minority), employment status (currently employed versus all other), and marital status (currently married versus all other). Education was coded as 11 or fewer years, 12 years or equivalent (GED), 13 to 15 years, and 16 or more years of completed education.

A number of health variables were also included as covariates. Smoking was coded 0 for individuals who never smoked and 1 for those who said they had smoked or were currently smoking. Exercise is the sum of four questions about the frequency of moderate and vigorous physical activity performed during the winter and summer months; a higher score indicates more frequent vigorous physical activity. Instrumental activities of daily living (IADL) was measured as the sum of nine questions asking how much their health limited activities such as lifting or carrying groceries or walking several blocks (internal reliability is 0.93). Body mass index (BMI) was obtained from self reports of a respondent's current weight, and height: BMI is an

Table 2. Descriptive statistics ($n = 3005$; sample not weighted).

Variables	1	2	3	4	5
1. FMH	1.0				
2. MDE	−0.12	1.0			
3. Chronological age	0.06	−0.09	1.0		
4. Discrepancy of age – felt age	0.13	−0.12	0.40	1.0	
5. Discrepancy of age – ideal age	−0.04	−0.02ns	0.62	0.26	1.0
Range	0–1	0–1	25–74	−73 to 62	−82 to 69
Mean	0.192	0.138	47.0	7.3	15.5
SD	0.39	0.34	13.1	9.6	12.3

Note: All correlations are statistically significant at $p < 0.05$ (two-tailed) unless noted as ns = not significant at $p < 0.05$.

individual's weight in kilograms divided by height in meters squared. ($BMI = kg/m^2$), and is a measure of total body fat. Last, chronic health conditions were measured as the number of 27 chronic physical health problems respondents indicated they suspected, or were diagnosed with (adapted from the Medical Outcomes Study; Brazier et al., 1992).

Analysis

We first inspect the bivariate relations between MDE, FMH, chronological age and age cohorts, and the discrepancy of felt and actual age with chronological age. Next, we carried out two simple logistic regression analyses on MDE and FMH separately. In the first model, we entered the five chronological age groups with the youngest group (25–34 years) as reference group. In the second model, we added the discrepancy between ideal and chronological age, and in the last step we added the discrepancy between felt and chronological age. In all logistic regression analyses we controlled for gender, race, marital and employment status, education, household income and all health variables (smoking, exercise, limitations in daily life, body mass index, and number of chronic physical conditions). All analyses were performed using SPSS version 18. Three variables (i.e., subjective felt age, subjective ideal age, and body mass index) accounted for 5.2% of the total 6.6% of missing data in the multivariate analyses. We used a hot-deck procedure to impute the mean value for missing data on the three aforementioned variables by age cohort. None of the associations of chronological age, and of felt and ideal age, with FMH or MDE were affected by including the mean-imputed missing values.

Results

There is a small and negative correlation between chronological age and MDE and an even smaller and positive correlation between chronological age and FMH (Table 2). Figure 1 plots the unadjusted prevalence of MDE and FMH by age cohort. The prevalence of MDE is highest, and the prevalence of

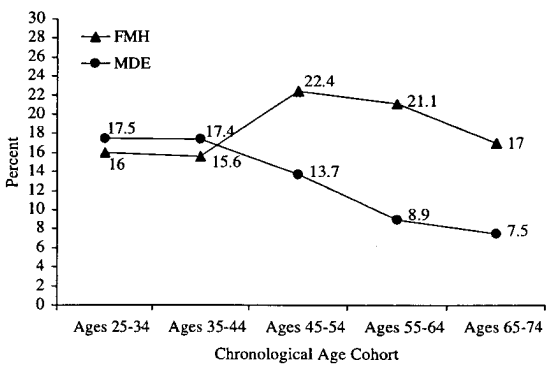

Figure 1. Unadjusted prevalence of MDE and FMH by 10-year age cohorts ($n = 3032$; sample weighted).

FMH is lowest, in the two youngest age cohorts (25–35 and 35–44). Moreover, in both younger age cohorts, slightly more adults had MDE than FMH. In contrast, rates of FMH are higher than MDE in the three older age cohorts (45–54, 55–64, and 65–74). There is a linear decline in the prevalence of MDE after the age cohort of 35–44. Flourishing, on the other hand, is not linearly related to age cohort. Compared with the age cohort of 35–44, FMH is 6.8% higher in the 45–55 age cohort, 5.5% higher in the 55–64 age cohort, and only 1.4% higher in the 65–74 age cohort. Overall, rates of MDE are higher than FMH between the ages of 25–44; mental health is better between the ages of 45 and 74, where rates of FMH are higher than MDE. Moreover, while MDE tends to decline with chronological age, FMH also declines in later life after it has peaked in the 45–54 year old cohort.

On average, the MIDUS adults are chronologically 47 years old, feel 40 years old, and would most like to be 31.5 years old. On average, then, the MIDUS adults feel seven years younger than their age, and would most like to be 15.5 years younger (Table 2). We find modest and positive correlations of chronological age with both kinds of age discrepancies: adults feel increasingly younger, and want to be increasingly younger, with age (Table 2). These findings are consistent with the view that both kinds of subjective age increase with chronological age. Although

Table 3. Simple logistic regression of MDE and FMH onto Predictors and Controls[a] ($n = 2991$; sample not weighted[b]).

	MDE			FMH		
Predictors	Odds ratio	95% CI	$Beta_{(lrc)}$	Odds ratio	95% CI	$Beta_{(lrc)}$
Chronological ages 25–34	Ref.	–		Ref.	–	
Chronological ages 35–44	1.1	(0.77–1.5)	0.02	1.0	(0.73–1.4)	−0.01
Chronological ages 45–54	0.59**	(0.40–0.84)	−0.12	1.6***	(1.2–2.3)	0.11
Chronological ages 55–64	0.31***	(0.19–0.48)	−0.26	2.4***	(1.6–3.5)	0.19
Chronological ages 65–74	0.18***	(0.09–0.32)	−0.29	2.5***	(1.5–4.0)	0.16
Discrepancy of age – ideal age	1.0	(0.99–1.02)	0.05	0.98***	(0.97–0.99)	−0.13
Discrepancy of age – felt age	0.987*	(0.97–1.0)	−0.07	1.03***	(1.01–1.04)	0.15
α	−3.3			−1.4		
Nagelkerke's R^2	0.15			0.14		

Notes: $*p < 0.05$; $**p < 0.01$; $*** p < 0.001$ (two-tailed).
[a]Each regression controlled for gender, race, marital and employment status, education, household income, smoking cigarettes, physical exercise, body mass index, number chronic physical conditions, and the scale of limitations of activities of daily living.
[b]Conclusions were unchanged when each regression was run on the weighted sample. $Beta_{(lrc)}$ is the standardized logistic regression coefficient estimate based on Long's (1997, pp. 70–71) formula.

individuals who feel younger also tend to want to be younger than their age, the small correlation ($r = 0.26$, $p < 0.05$) suggest that both kinds of discrepancies are relatively independent.

The discrepancy of felt from actual age correlated as predicted with FMH but only partially as predicted with MDE (Table 2). Adults who feel younger are more likely to have FMH and less likely to have MDE. The discrepancy of ideal from actual age correlated negatively with FMH, but was not associated with MDE (Table 2). Adults who want to be much younger than their actual age are less likely to have FME; conversely, adults who want to be an age that is closer their actual age are more likely to report FMH.

Next, we report in Table 3 the results of the multivariate models to investigate whether and to what extent chronological and subjective age predict the odds of MDE and FMH. Adults between the ages of 35 and 44 have the same odds of MDE as the reference age (25–34) cohort. Compared with the reference age cohort, the likelihood of MDE is reduced by 41% for adults aged 45–54, by 69% for adults aged 55–64, and by 82% for adults aged 65–74. Ideal age discrepancy is not associated with MDE. The discrepancy of felt age is negatively associated with MDE; the odds of MDE decrease by 1.3% for each year adults feel younger than their actual age.

The adjusted odds ratio of FMH increases with chronological age. Adults between the ages of 35 and 44 have the same odds of FMH as the reference age (25–34) cohort. However, and compared with the reference age cohort, adults aged 45–54 are just over 1.5 times, and adults aged 55–64 and 65–74 are about 2.5 times, more likely to have FMH. Ideal age discrepancy is negatively associated with FMH. The adjusted odds ratio of FMH decreases 2% for each year one wants to be younger than one's actual age; this finding fits with the prediction that an increasing discrepancy of ideal age is maladaptive. In contrast, the felt age discrepancy is positively associated with FMH. The odds ratio of FMH increases by 3% for each year one feels younger than their actual age, which is consistent with the prediction that an increasing felt age discrepancy is an adaptive compensatory strategy.

Next, we assessed the relative contribution of subjective age and chronological age for predicting MDE and FMH by computing the standardized logistic coefficients for each set of predictor variables using Long's (1997, pp. 70–71) formula: $Beta_{(lrc)} = (b)(s_x)/(\pi/\sqrt{3})$. The b is the logit coefficient, s_x is the sample standard deviation of the predictor variable, and $\pi/\sqrt{3} = 1.8$, which is the standard deviation of the standard logistic distribution (Long, 1997, pp. 70–71). We find that felt age is a much weaker predictor of MDE than chronological age, particularly compared with the two oldest chronological age cohorts. Here, the $Beta_{(lrc)}$ for ages 65–74 is 4.1 times stronger, and the $Beta_{(lrc)}$ for ages 55–64 is 3.7 times stronger, than the $Beta_{(lrc)}$ for felt age. In contrast, felt age is as strong of a predictor of FMH as the two oldest chronological age cohorts. Here, the $Beta_{(lrc)}$ for ages 65–74 is almost identical, while the $Beta_{(lrc)}$ for ages 55–64 is only 1.27 times stronger, than the $Beta_{(lrc)}$ for felt age. Ideal age, too, is as strong a predictor of FMH as chronological age. The $Beta_{(lrc)}$ for ages 65–74 is only 1.23 times higher, while the $Beta_{(lrc)}$ for ages 55–64 is 1.46 times stronger, than the $Beta_{(lrc)}$ for ideal age. In sum, chronological age and subjective age are comparable independent predictors of FMH, while chronological age is a much strong predictor of MDE than subjective (i.e., felt) age.

Discussion

Mental health is central to the study of aging. Yet, most research on mental health has used psychopathology screening scales and psychiatric diagnoses, or has focused on separate domains of subjective well-being (e.g., emotional well-being – positive affect or life satisfaction; psychological well-being – Ryff's (1989)

scales). The dual continua model reveals that the absence of mental illness such as MDE does not imply the presence of mental health (Keyes, 2005a). FMH, in turn, is a syndrome of subjective well-being that combines feeling good (i.e., emotional well-being) with positive functioning (i.e., psychological and social well-being).

According to the two continua model, gerontology's goal should be the reduction of symptoms or diagnoses of mental disorder ***and*** the promotion of FMH in more adults as they age. By doing the former (i.e., reduce mental disorder), most researchers and policymakers have assumed they accomplish the latter (i.e., increase mental health). This assumption is false according to the studies of the complete mental health model (Keyes, 2002); the study of successful aging through positive mental health is a necessary compliment to the study of psychopathology. Until now, no research on the epidemiology of mental health as a complete state has been carried out in the United States, nor have the relations of mental illness such as MDE and positive mental health been studied simultaneously in relation to objective, felt, and ideal age.

Many of the studies reviewed earlier have shown that depression generally declines between the ages of about 25 and 74, a finding we replicate in the MIDUS sample. Our study also reveals that, after the age cohort of 35–44, flourishing is found more often in each subsequently older cohort, net of a host of sociodemographic controls, physical health, and disability measures. The absence of MDE and the presence of FMH (i.e., complete mental health) are most likely among the three older age cohorts in the MIDUS sample. Recall that rates of FMH declined in each older age cohort after its peak in the 45–54 year old cohort, although it remained higher than rates of MDE, which declined with chronological age. This finding shows that MDE and FMH are not each other's opposite, thereby providing further evidence for the two continua model.

Subjective age (felt and ideal) added in distinct ways to the explained variance in MDE and FMH. Consistent with previous studies on subjective age and functioning in later life (Demakakos et al., 2007; Infurna et al., 2010; Westerhof & Barrett, 2005), the discrepancy of felt age from actual age was predictive of both FMH and MDE; however, the discrepancy of ideal age from actual age was only predictive of FMH.

Chronological age and subjective age were found to be comparable independent predictors of FMH but not MDE, where chronological age was a much stronger predictor of MDE than subjective (i.e., felt) age. Moreover, and independently of chronological age, felt age was a predictor of both MDE and FMH. Feeling younger than one's age was related with increased odds of FMH and decreased risk of MDE. However, wanting to be younger than one's age was related to decreased risk of FMH but unrelated with MDE. Our findings are consistent with the argument for the adaptive role of subjective age, with feeling younger representing a compensatory strategy while wanting to be an age that is closer to one's actual age representing an identity assimilative strategy. The distinctive relationships of felt and ideal age with FMH and MDE are consistent with the two-continua model (Keyes, 2005; Westerhof & Keyes, 2010), because mental health and mental illness such as MDE are relatively independent and therefore will not have all causes in common. Rather, there is likely to be distinctive predictors and causes, which in our study was the discrepancy of ideal from actual age, which predicted only FMH (not MDE).

A limitation of this study is that we cannot infer causality from these data. However, one can imagine a reciprocal relationship between mental health (FMH and MDE) and subjective age. That is, FMH is likely to promote an outlook to life that enables adults to feel younger and want to be an age that is closer to their actual age. Recall that to have FMH, adults must meet the criteria of feeling good about a life in which they are also functioning well (psychologically and/or socially). That is, feeling happy about a life in which one also feels socially integrated, has purpose and meaning, has something left to contribute to society – just some of the criteria of flourishing – may be conducive to feeling younger and wanting to be one's age. At the same time, feeling younger and wanting to be an age that is closer to one's actual age are likely to motivate activities (i.e. traveling, joining a new club, learning a new skill or hobby, volunteering or tutoring) that promote FMH and reduce MDE. Recent findings show that promoting FMH can reduce the risk of developing internalizing (i.e., MDE, Panic Attacks, and Generalized Anxiety Disorder) mental illness (Keyes, Dhingra, & Simoes, 2010).

Another limitation of this study is the current assessment of MDE and FMH. We only used MDE in the past year as a measure of mental illness, thereby leaving out depressive symptoms not indicative of MDE as well as other mental illnesses. The evidence for the two continua model in this study adds, however, to other studies using continuous measures of depressive symptoms or a broader range of mental illnesses (e.g., Westerhof & Keyes, 2010). This article (see also Keyes, 2002, 2005a) measured FMH with a combination of statistical (e.g., tertile cut-points) and rational criteria similar to the diagnosis of depression in the DSM (e.g., a combination of emotional well-being and positive functioning and at least 50% or more of the symptoms). The tertile is sample-specific, and Keyes (2002) adopted it because the Likert response options used for the MIDUS well-being scales did not lend themselves to a threshold as the CIDI-SF, where response options for diagnosing depression includes having symptoms 'almost every day' or 'every day'. We therefore caution against any strict interpretations of the current prevalence estimates of FMH. The MIDUS well-being scales have been modified into a short form measure with response categories that now match the CIDI-SF (Keyes, 2009b)

that permits stricter interpretation of population prevalence across populations and over time.

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