Wisdom and Mental Health Across the Lifespan

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Objectives. The relationships between wisdom and age and between wisdom and mental health are complex with empirical results often inconsistent. We used a lifespan sample and broad, psychometrically sound measures of wisdom and mental health to test for possible age trends in wisdom and its subcomponents and the relationship between wisdom and hedonic and eudaimonic aspects of well-being.

Method. Participants included 512 Dutch adults ranging in age from 17 to 92 (M = 46.46, SD = 21.37), including 186 men and 326 women. Participants completed measures of wisdom, physical health, mental health, and personality.

Results. Significant quadratic trends indicated that middle-aged adults scored higher on wisdom than younger and older adults. Investigation of wisdom subcomponents illustrated that a complex pattern of increases and decreases in different aspects of wisdom helped account for these age findings. Bivariate correlations showed the expected positive association between wisdom and mental health. Hierarchic regression analyses indicated that the positive association between wisdom and mental health remained significant after accounting for demographic variables (i.e., sex, age, education) and personality traits (i.e., neuroticism, extraversion, and openness to experience).

Discussion. Age trends in the components of wisdom (older adults higher in life experience but lower in openness relative to younger and middle-aged adults) help explain the curvilinear pattern showing an advantage in wisdom for middle-aged adults. The greater association between wisdom and eudaimonic well-being suggests that wise persons enhance mental health by pursuing meaningful activities.

Key Words: Age differences—Eudaimonic well-being—Hedonic well-being—Mental well-being—Personality—Wisdom.

Wisdom is an ancient concept (Birren & Svensson, 2005; Jeste & Vahia, 2008; Karelitz, Jarvin, & Sternberg, 2010; Osbeck & Robinson, 2005), which, until recently, has remained relatively underexamined by mainstream psychology (Sternberg, 1990; Sternberg & Jordan, 2005). Since pioneering work in the late 1970s and early 1980s, however, (Clayton & Birren, 1980; Sternberg, 1985) there has been a steady increase in conceptualization, measurement, and empirical investigations of wisdom. This growth, triggered in part by a contemporary emphasis on positive psychology, has taken many forms (Staudinger & Gluck, 2011) reflecting the emerging vitality of the field. One of the positive outcomes of contemporary scholarship is the growing consensus concerning a definition of wisdom.

Recently, Jeste and coworkers (2010) conducted a two-stage Delphi using a sample of wisdom experts. Results revealed “a remarkable consensus” (p. 676) among expert panel members concerning several components of wisdom (e.g., differentiation from related constructs such as intelligence and spirituality), as well as characteristic features of wisdom and wise persons. Wisdom is generally considered a multidimensional construct in which life lessons learned via evaluative reflection enable individuals to not only grow individually but to contribute to the common good as well.

The type of life lessons which ostensibly contribute to wisdom development accrue over time, a fact giving rise to the common perception that wisdom must, therefore, increase with age. Although age and experience are positively correlated, experience per se does not necessarily produce wisdom. In fact, the type of experience, one’s inclination to reflect upon and evaluate such events, and the competence to learn and grow from adversity (among other issues) are more influential in wisdom development than experience (and therefore age) alone (Webster, 2003).

The relationship between wisdom and aging is complex (Ardelt, 2011; Jordan, 2005; Richardson & Pasupathi, 2005; Staudinger, 1999), with some theoretical models postulating a positive association with aging and wisdom (Erikson, 1963), others (Meacham, 1990) postulating a loss of wisdom in older adulthood, and others still postulating a peak in midlife (Sternberg, 2005). Whether, and how, wisdom develops with age, therefore, remains an open question.

Part of this lack of resolution may be due to differences in measures of wisdom used, the characteristics of samples employed, and even the definition of what constitutes older adulthood, across various studies. For instance, with respect to the latter, Karelitz and coworkers (2010) perceptively note that, given changes in average lifespan and the physical and mental health improvements accompanying such changes, what was once considered as older adulthood is now considered late middle age by contemporary researchers. So, for instance, 65-year-old participants in studies conducted in the 1980s were most likely considered elderly.
adults and were likely to be in poorer health compared with 65-year-old persons today, who might very well be considered late middle aged by current research standards. Direct comparisons between older adults across earlier and later studies, therefore, can be problematic.

Despite positive lay stereotypes, and some researcher expectations, much empirical evidence is inconsistent with an older and wiser outcome (Baltes, Staudinger, Maercker, & Smith, 1995; Brugmann, 2006; Staudinger, 1999), prompting some researchers (Pasupathi, Staudinger, & Baltes, 2001; Webster, 2010) to investigate the “seeds” of wisdom in younger adults. Precursors to, and emergent properties of, wisdom develop in late adolescence. Pasupathi and coworkers (2001), using the well-known Berlin Paradigm, found increases in wisdom-related behavior from late adolescence to approximately the late twenties, followed by little change throughout middle and early later adulthood. Webster (2003, 2007) found no association between age and wisdom as measured with the Self-Assessed Wisdom Scale (SAWS), a finding generally consistent with other questionnaire measures of wisdom (Taylor, Bates, & Webster, 2011). The latter findings, however, were simple bivariate correlations, and it is possible that curvilinear relationships went undetected. According to Sternberg (2005), wisdom may develop along several possible pathways that follow similar trajectories to crystallized and/or fluid intelligence. One of these models follows a combined crystallized/fluid intelligence pathway. According to this model, crystallized intelligence increases with age to later adulthood after which it levels off until a few years before death. In contrast, fluid intelligence reaches its peak in young adulthood and, thereafter, declines with age, precipitously so near the end of life. Wisdom, then, increases with lived experiences, much like crystallized intelligence, but then at some point in early life, limitations in cognitive, physical, and social resources contribute to a decline in wisdom. In this study, we address this possible curvilinear relationship. Our first, and major, expectation is that wisdom does not have a linear but a curvilinear relationship with age, with a peak in midlife.

The relationship between wisdom and mental health is also complex (Ardelt, 2011; Richards & Hatch, 2011) and depends to an extent on the measures of wisdom used (e.g., questionnaire, self-narratives, think aloud protocols, and peer ratings; Redzanowski & Gluck, 2012), as well as the facets of well-being (e.g., values, happiness, life satisfaction) employed across studies. As one example, the theoretical relationship between wisdom and happiness is contentious (Bergsma & Ardelt, 2012); some authors (Mansfield, McLean, & Lilgendahl, 2010; Staudinger & Gluck, 2011) contend that because wisdom is likely to develop through coping with negative life events, the development of a hedonistic type of happiness is certainly not guaranteed to occur later in life. Consistent with this position, studies using the Berlin Wisdom model and studies employing a transcendent wisdom measure (Mickler & Staudinger, 2008; Wink & Helson, 1997, respectively) showed that life satisfaction and wisdom were unrelated. In contrast, studies by Kunzmann and Baltes (2003) and Webster (2010), which examined the relationship between wisdom and values, showed that those values associated with eudaimonic well-being (i.e., those focusing on personal growth, pursuit of meaning, positive contribution to others and society) were more strongly associated with wisdom relative to hedonistic values (e.g., pursuit of fun and pleasure for the self). Nevertheless, despite the various approaches and measures used, results are generally consistent with the theoretical expectation that wisdom provides a suite of psychosocial strengths, which enable individuals to experience life optimally even in the face of less than ideal objective life circumstances (Ardelt, 1997; Ardelt & Oh, 2010; Le, 2011; Linley, 2003; Takahashi & Overton, 2002, Webster, 2010). It appears, then, that wise persons do enjoy personal pleasures but are perhaps more concerned about growth, meaning, and contribution to others. Because the measure we use to assess well-being in this study allows for an examination of hedonistic and eudaimonic aspects of overall well-being (Keyes, 2005; Westerhof & Keyes, 2010), we expect that wisdom is related to positive mental health overall and that the strength of the association between wisdom and eudaimonic well-being is stronger than that between wisdom and hedonistic well-being.

The present project builds upon and extends earlier work by including a non-North American (i.e., Dutch), lifespan sample, multiple personality indicators, and broad measures of both mental health and wisdom. Our two main hypotheses are (a) that total wisdom is related to age in a curvilinear fashion such that middle-aged adults, as a group, will score higher than both younger and older adults and (b) that wisdom is positively related to overall mental health when the latter is measured with instruments assessing emotional, social, and psychological well-being combined, and that this relationship holds even after accounting for demographic and personality factors.

Methods

Participants

Participants consisted of 512 Dutch adults ranging in age from 17 to 92 years (\(M_{\text{age}} = 46.46, SD = 21.37\)), including 186 men and 326 women. Students (17–29 years) in an introductory personality psychology class participated themselves and then recruited two additional adults from a midlife group (30–59) and an older group (60–92). The sample was basically healthy (67.8% reported no health limitations, 26.4% slight limitations, and 5.9% considerable health limitations; mean subjective health is 7.7 on a scale from 0 to 10). Completed education varied from lower levels (i.e., 10 years or less, 23%) and middle levels (between 11 and 14 years, 41%) to higher levels (15 years or more, 36%). Older adults (\(M = 3.78, SD = 1.87\)) had
significantly less education than both the midlife ($M = 5.01$, $SD = 1.51$) and younger ($M = 4.73$, $SD = 1.01$) adults, $F(2, 509) = 30.52$, $p \leq .01$, partial $\eta^2 = .107$, who did not differ from each other.

MEASURES

Demographic variables.—We asked for completed educational level in accordance with the Dutch educational system (primary school, lower vocational level, lower secondary level, higher secondary level, middle vocational level, higher vocational level, university). We also asked for age and gender. As we were interested in curvilinear relationships as well, we also computed age squared. To avoid collinearity between age and age squared, age was centered on the mean.

Physical health.—Physical health was assessed with both a subjective health questionnaire (“How would you rate your present health condition on a scale from 0 to 10?”) and a measure of physical health limitations (“Are you limited in your daily life due to health problems, e.g. in household chores?”) with three answering categories: Not at all, Slightly; Considerably).

Personality.—Three personality traits, neuroticism, extraversion, and openness to experience, were measured with a Dutch translation (Hoekstra, Ormel, & de Fruyt, 1996) of Costa and McCrae’s (1992) NEO-FFI. In this study, the reliability (Cronbach’s alpha) was good (neuroticism = .86; extraversion = .82; openness = .71).

Well-Being.—Well-being was measured with the Dutch Mental Health Continuum—Short Form (MHC-SF; Lamers, Glas, Westerhof, & Bohlmeijer, 2012; Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2011). The MHC-SF consists of fourteen items, which correspond to theoretical formulations of emotional, psychological, and social well-being (Keyes, 2005). Sample items are “In the past month, how often did you feel: …happy? …that your life has a sense of direction or meaning to it? …that people are basically good?” There were six answering categories ranging from almost never to every day. The scale proved to have good concurrent and discriminatory validity (Lamers et al., 2011). Analyses based on item response theory showed that there is no substantial differential item functioning across sociodemographic variables, physical and mental illness, nor across time (Lamers et al., 2012). Hence, the items are interpreted in a similar way by people from various backgrounds in Dutch society at different points in time. The overall MHC-SF is highly reliable in the present sample (Cronbach’s alpha = .89), as is the hedonistic subscale (comprised the psychological and social well-being items of the MHC-SF; Cronbach’s alpha = .85) and the eudaimonic subscale (comprised the psychological and social well-being items of the MHC-SF; Cronbach’s alpha = .86).

Wisdom.—Wisdom was measured with the SAWS (Webster, 2003, 2007), a 40-item questionnaire reflecting the following five components of wisdom (sample items are italicized): Critical life experiences: “I have experienced many painful events in my life”; Reminiscence/reflectiveness: “Reviewing my past helps me gain perspective on current concerns”; Openness to experience: “I like to read books which challenge me to think differently about issues”; Emotional regulation: “I am very good about reading my emotional states”; and Humor: “Now I find that I can really appreciate life’s little ironies.” Participants respond to each question using a Likert type scale where 1 = strongly disagree to 6 = strongly agree.

The SAWS has excellent reliability (i.e., test–retest and internal consistency) and various forms of validity. With respect to the latter, the SAWS predicts levels of foolishness (negatively), generativity, and ego integrity (Webster, 2007); positive psychosocial values such as personal growth and sense of coherence (Webster, 2010); civic engagement and altruism (Bailey & Russell, 2009); benefit finding in cancer patients (Costa & Pakenham, 2012); forgiveness, psychological well-being, and a lack of a socially desirable response style (Taylor et al., 2011); a balanced time perspective (Webster, Bohlmeijer, & Westerhof, 2011); and identity processing styles (Webster, under review). Cronbach’s alpha for the total SAWS in this study was .91, and for the experience, emotional regulation, reminiscence/reflectiveness, humor, and openness subscales, respectively, Cronbach’s alphas were .83, .81, .85, .82, and .74.

RESULTS

We first analyzed the data to confirm bivariate associations for the expected relationships. Next, we tested for quadratic trends between age and wisdom in a series of curve estimation regressions, first for the total wisdom score and then for each of the SAWS subscales. Finally, we used hierarchic regression analyses to determine whether wisdom explained additional unique variance in mental health beyond demographic and personality variables.

Bivariate correlational results, as can be seen in Table 1, support our predictions. First the linear association between wisdom and age is nonsignificant, whereas the curvilinear relationship (i.e., $age^2$) is significant and remains so even after controlling for education level, $r(509) = -.165$, $p < .001$. We discuss these age findings in more detail in the regression results below. Second, the correlation between total wisdom and mental health was positively correlated. Additionally, the correlation between wisdom and hedonic aspects of mental health ($r(512) = .300$) and the correlation between wisdom and eudaimonic aspects of mental health
Table 1. Descriptive Statistics and Bivariate Correlations for Main Demographic and Study Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Sex</th>
<th>Age</th>
<th>Age²</th>
<th>Educ</th>
<th>HM</th>
<th>EM</th>
<th>MHC</th>
<th>Neur</th>
<th>Extr</th>
<th>Open</th>
<th>SAWS</th>
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<tr>
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<td>—</td>
</tr>
<tr>
<td>Age</td>
<td>46.46</td>
<td>21.38</td>
<td>—</td>
<td>—</td>
<td>—0.45</td>
<td>—0.17</td>
<td>—1.26</td>
<td>—0.04</td>
<td>0.33</td>
<td>0.027</td>
<td>0.269</td>
<td>—0.208</td>
<td>—0.031</td>
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<tr>
<td>Age²</td>
<td>456.19</td>
<td>395.93</td>
<td>—</td>
<td>—</td>
<td>—0.069</td>
<td>—2.62</td>
<td>—0.072</td>
<td>—0.075</td>
<td>—0.081</td>
<td>—1.00</td>
<td>—0.160</td>
<td>—0.273</td>
<td>—0.090</td>
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<tr>
<td>Educ</td>
<td>4.53</td>
<td>1.58</td>
<td>—</td>
<td>—</td>
<td>—0.384</td>
<td>—1.17</td>
<td>—0.244</td>
<td>—0.248</td>
<td>0.120</td>
<td>0.082</td>
<td>—0.212</td>
<td>—0.224</td>
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<tr>
<td>HM</td>
<td>13.55</td>
<td>2.93</td>
<td>—</td>
<td>—</td>
<td>—0.178</td>
<td>—0.217</td>
<td>—0.226</td>
<td>—1.169</td>
<td>—0.211</td>
<td>0.316</td>
<td>—0.194</td>
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<tr>
<td>EM</td>
<td>41.72</td>
<td>9.90</td>
<td>—</td>
<td>—</td>
<td>—0.576</td>
<td>0.730</td>
<td>—0.418</td>
<td>—0.382</td>
<td>0.191</td>
<td>0.300</td>
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<tr>
<td>MHC</td>
<td>55.28</td>
<td>11.84</td>
<td>—</td>
<td>—</td>
<td>—0.979</td>
<td>—0.334</td>
<td>0.415</td>
<td>0.238</td>
<td>0.443</td>
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<tr>
<td>Neur</td>
<td>30.17</td>
<td>7.87</td>
<td>—</td>
<td>—</td>
<td>—0.383</td>
<td>0.442</td>
<td>0.247</td>
<td>0.445</td>
<td></td>
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<tr>
<td>Extr</td>
<td>42.00</td>
<td>6.59</td>
<td>—</td>
<td>—</td>
<td>—0.402</td>
<td>—0.047</td>
<td>—0.185</td>
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<tr>
<td>Open</td>
<td>38.22</td>
<td>6.32</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—0.088</td>
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<tr>
<td>SAWS</td>
<td>171.88</td>
<td>21.91</td>
<td>—</td>
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</table>

Notes. Sex (males = 1; females = 2); Age² = age squared; Educ = education level; HM = hedonistic mental health; EM = eudaimonic mental health; MHC = Mental Health Continuum–SF; Neur = neuroticism; Extr = extraversion; Open = openness to experience; SAWS = Self-Assessed Wisdom Scale. Correlations at or above .15 are statistically significant at the .05 level after Bonferroni correction.

(r(512) = .443) were both significant. Moreover, the difference in strength between these two correlations is also statistically significant (Steiger’s Z = −6.84, p < .01), a point we return to in the discussion section.

With respect to personality traits, wisdom is negatively correlated with neuroticism and positively with extraversion and openness. Finally, higher levels of education are associated with higher levels of wisdom, but wisdom is unrelated to gender. Mental health showed similar relationships among demographic and personality variables as did wisdom. Specifically, mental health was uncorrelated with gender, curvilinearly related to age, negatively correlated with neuroticism, positively correlated with extraversion and openness, and the demographic variable of education level. Given the significant curvilinear relationship between age and total wisdom score, we conducted a series of regression analyses in which we used curve estimation procedures to assess quadratic trends in the age by wisdom relationship.

Figure 1 illustrates the trends apparent in the scatterplots for the total wisdom score (a) and for the five subscales of the SAWS separately. Figure 1A shows the relationship between age and total wisdom score. The quadratic trend is significant (β = −23, p < .001). Total wisdom increases from younger adulthood, reaches a peak in midlife, and thereafter declines. Because this type of curvilinear relationship is an important new finding, we examined the age profiles for each of the SAWS subscales separately in order to determine what might be driving this overall relationship.

As can be seen in Figure 1B, the quadratic trend for critical life experience is significant (β = −13, p < .005). Critical life experiences increase in age from young adulthood to midlife, after which they level out or slightly increase in older adulthood. Figure 1C shows a significant quadratic trend in emotional regulation (β = −22, p < .001). Emotional regulation increases from young adulthood, peaks in midlife, after which it declines to levels similar to younger adults. Figure 1D shows a significant quadratic trend for openness (β = −23, p < .001). Scores from young adulthood to midlife are initially high and stay stable, after which openness declines in older adulthood. Figure 1E shows a significant quadratic tend for humor (β = −17, p < .001). Scores from young adulthood to midlife are initially high and stay stable, after which humor declines in older adulthood. Finally, Figure 1F shows the nonsignificant quadratic trend for reminiscence (β = −.06, p > .05). Younger, midlife, and older adults all show a similar level of engagement with reminiscence and life reflection.

In terms of well-being, the main finding that wisdom is positively correlated with mental health, supports our prediction at the bivariate level. However, some of the demographic variables and the three personality traits are interrelated with both mental health and wisdom. The question arises as to whether the association between wisdom and mental health remains statistically significant when accounting for these other variables. To investigate this issue, we conducted a hierarchic regression analysis on the dependent variable of mental health, entering demographic variables, personality traits, and wisdom as hierarchic blocks. The results support our hypothesis and can be seen in Table 2.

In Model 1, the demographic variables (gender, age, age squared, and education) were entered as a block. The overall model, accounting for 7.7% of variance in mental health, was significant, F (4, 507) = 11.64, p < .001; only age squared and education level contributed to the explained variance. In Model 2, the personality variables of neuroticism, extraversion, and openness to experience were entered as a block. The overall model, accounting for an additional 23.8% of the variance in mental health, was significant, F (7, 504) = 34.26, p < .001; all three personality variables contributed to the explained variance. Finally, in Model 3, we added the total wisdom score as a block. The overall model, accounting for an additional 4.4% of the variance in mental health, was significant, F (8, 503) = 36.30, p < .001. In the final model, gender, age squared, neuroticism, extraversion, and wisdom all significantly contributed to the explained variance in mental health scores. Age, education level, and the personality trait of openness to experience failed to contribute to explained variance.
Figure 1. (A) Quadratic trend in wisdom as a function of age, (B) in critical life experiences as a function of age, (C) in emotional regulation as a function of age, (D) in openness as a function of age, (E) in humor as a function of age, and (F) in reminiscence/reflection as a function of age.
Table 2. Hierarchic Regression on Total Mental Health Continuum-Short Form

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
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<th>Model 3</th>
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<tbody>
<tr>
<td></td>
<td>β</td>
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<td>sig</td>
<td>β</td>
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<td>sig</td>
<td>β</td>
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<td>.095</td>
<td>2.532</td>
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<td>Age</td>
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<td>.555</td>
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<td>-.145</td>
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<td>.000</td>
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<td>Educ</td>
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<td>.002</td>
<td>.022</td>
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<td>.026</td>
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<td>Neur</td>
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<td>.000</td>
<td>-.251</td>
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<td>.000</td>
<td>-.219</td>
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<td>Extr</td>
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<td>7.492</td>
<td>.000</td>
<td>.229</td>
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<td>.000</td>
<td>.056</td>
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<td>Open</td>
<td>.176</td>
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<td>.260</td>
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<td>.905</td>
<td>3.456</td>
<td>.004</td>
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<td>R</td>
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<td>Adj. R²</td>
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<td>.313</td>
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<td>.238</td>
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<tr>
<td>F</td>
<td>11.637*</td>
<td></td>
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<td>34.256*</td>
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<td>36.304*</td>
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</table>

Note. Sex (males = 1; females = 2); Age² = age squared; Educ = education level; Neur = neuroticism; Extr = extraversion; Open = openness to experience; SAWS = Self-Assessed Wisdom Scale.

*p < .001.

Discussion

This study examined the relationship among wisdom, age, and mental health. We used a European lifespan sample, employing a psychometrically sound measure of wisdom. Results both augment and extend prior research in this area.

Bivariate correlations show that, consistent with most previous findings using the SAWS, neither age nor gender was associated with wisdom (Taylor et al., 2011). Other questionnaire measures of wisdom report similar findings when only younger and older adults are compared directly. The inclusion of a midlife sample in this study allowed us to extend previous findings. As expected, midlife adults scored highest on measures of wisdom, with younger and older adults scoring at the same average level. These findings are consistent with the combined crystallized/fluid intelligence model proposed by Sternberg (2005) described earlier. Such declines in later adulthood are seen in the Berlin wisdom paradigm as well (Baltes & Staudinger, 2000) and so are unlikely to be restricted to the particular measure used in this study. We investigated this curvilinear trend in more detail by examining the age trends in each of the subscales of the SAWS separately.

We found that critical life experiences increased from young adulthood to middle age. Thereafter, experiences continued to increase but at a nonsignificant level, suggesting that the type of life events that ostensibly contribute to wisdom development accrue over time, a fact giving rise to the common perception that wisdom must, therefore, increase with age. Although age and experience are positively correlated, experience per se does not necessarily produce wisdom, as demonstrated in this study. In fact, the quality of the experience, one’s inclination to reflect upon such events, and the competence to grow from adversity (among other factors) are more influential in wisdom development than experience (and therefore age) alone.

Many of the life events indexed in the SAWS are strongly emotional in tone and require emotional regulation strategies. We found that middle-aged adults scored higher than both the younger and older adults on the emotional regulation subscale. These findings are consistent with dynamic integration theory (Labouvie-Vief, 2009; Labouvie-Vief, Diehl, Jain, & Zhang, 2007), which differentiates between affect optimization and affect complexity. The former “reflects an emphasis on maintaining hedonic tone by maximizing positive affect and minimizing negative affect in regulating emotions” (Labouvie-Vief et al., 2007, p. 738). Age differences in this facet parallel those reported by others employing different conceptual orientations, such as socioemotional selectivity theory (Carstensen, 2006) in which older adults report similar or slightly higher levels of happiness and life satisfaction relative to younger persons.

In contrast, affect complexity focuses on “objectivity, personal growth, individuation, and emotional and conceptual complexity” (Labouvie-Vief et al., 2007, p. 738). Here, a curvilinear relationship with age is often found, with middle-aged adults scoring higher than both younger and older adults; these findings clearly mirror the present results. Thus, affect complexity is closer to eudaimonic, rather than hedonic, well-being. As such, affect complexity should have a stronger relationship to wisdom than affect optimization. Indeed, in this study, we found that the association between wisdom and eudaimonic well-being was stronger than the association between wisdom and hedonistic well-being.

According to Labouvie-Vief and coworkers (2007), the reflective and executive processes that are required for affective monitoring are jeopardized by later-life declines in cognitive resources. This suggests that the emotional resources required to sort through, evaluate, and eventually synthesize complex affective states remain immature in younger adulthood, peaks in middle age, and then begins a decline after about age 60 due to the impaired cognitive resources identified by Labouvie-Vief and others. In order to fully examine
powerful emotional experiences and appreciate and synthesize complex and nuanced emotional states, an openness is required to do so. We found age differences in the SAWS openness subscale scores as well.

Opportunity was lowest in the older adults in this sample. These results are consistent with personality findings, both cross-sectional and longitudinal, in which openness shows small declines with age (Donnellan & Lucas, 2008; Pedersen & Reynolds, 1998; Stephan, 2009). Because opportunity is associated with curiosity, engagement in novel actions, and willingness to entertain complex and perhaps initially uncomfortable new opinions, it plays a strong role in the development and maintenance of wisdom. Small declines in older adulthood in this component, then, help explain the overall decrease in total wisdom reported in the current project. Openness also increases the likelihood that persons can laugh at themselves and not take themselves too seriously. As Erikson (cited in Friedman, 1999) stated, “I can’t imagine a wise old person who can’t laugh. The world is full of ridiculous dichotomies” (p. 468).

Unfortunately, there is little empirical evidence specifically investigating age differences in sense of humor (Ruch, McGhee, & Hehl, 1990). A relatively recent, large scale study of over 55,000 Norwegians, however, provides some preliminary evidence. Svebak, Martin, and Holmen (2004) administered a 3-item sense of humor scale, as part of a larger health study, to the entire population of adults 20 and older in a county in Norway. Results indicated that sense of humor and age were significantly, and negatively, correlated ($r = -.29$). These results are consistent with our bivariate finding that age and humor were also negatively correlated ($r = -.17$). Caution must be used in this comparison, however, as the type of humor assessed via the SAWS (i.e., a willingness to laugh at oneself, a prosocial type of humor used to put other persons at ease, and a sense of irony) is not identical to the type of humor assessed in Svebak and coworkers (2004). Notwithstanding these potential differences, Svebak and coworkers (2004) results corroborate our findings. Given the paucity of research on age differences in the sense of humor, theoretical explanations for the current results are difficult to identify.

One possible link is with openness, which as described earlier, shows a well-documented decline with age. In the current project, openness and humor are positively correlated ($r = .55$), suggesting a link between the two. Ruch and coworkers (1990) also noted a link between certain types of humor (e.g., incongruity resolution versus nonsense humor) with personality traits such as conservatism and sensation seeking. The former personality dimension increases, and the latter personality dimension decreases, with age that helps explain the finding that older adults tended to prefer incongruity-resolution types of humor (which is simpler and has closure) in contrast to nonsense humor (which is more open ended and ambiguous). Again, the results of Ruch and coworkers (1990) are relevant but not directly related to the type of humor measured by the SAWS and so remain suggestive rather than definitive.

Finally, the findings on the reminiscence/reflectiveness component are consistent with results employing lifespan samples and using psychometrically sound measures of reminiscence (Webster, 1993, 2003; Webster, Bohlmeijer, & Westerhof, 2010). Using the Reminiscence Functions Scale (RFS; Webster, 1993) with adults ranging in age from late adolescence to the mid-90s, results consistently show that there are no age differences in total reminiscence score, but there are age differences on the subscores (the RFS assesses eight different reminiscence functions). For instance, older adults tend to score higher on social functions of reminiscence, such as teaching others about their life experiences, whereas younger adults tend to score higher on self-related functions having to do with identity formation, as well as a ruminative type of reminiscence associated with negative memories.

In summary, midlife adults score higher than both younger and older adults on certain subdimensions of wisdom (e.g., critical life experiences, emotional regulation, relative to younger adults; openness, humor, and emotional regulation, relative to older adults). Midlife adults have a critical mass of life experiences and the cognitive strengths and emotional resources to process such events. Midlife is a time when adults are often at their peak in terms of earning power, crystallized intelligence, empathy (O’Brien, Konrath, Gruhn, & Hagen, 2012), and social engagement (e.g., caregiving for both older parents and younger children; colleague interactions at work). Moreover, physical health and cognitive resources (e.g., fluid intelligence) are also at high, albeit not maximum, strength. As such, they are both more likely to be in a position in which wise decisions and behaviors are required, as well as have the resources (e.g., cognitive, motivational, emotional) at their disposal to evolve sagacity. In terms of mental health, bivariate correlations supported our prediction that wisdom would be positively correlated with overall well-being. These results are consistent with prior findings using the SAWS and psychological well-being (Taylor et al., 2011) and different measures of wisdom (e.g., 3-dimensional wisdom scale; Ardelt, 1997) and life satisfaction. Our measure of mental health included the three components of emotional, social, and psychological well-being, and wisdom has been associated with this broad measure of mental health.

For instance, wise persons have a rich and differentiated emotional life and can recognize and utilize both subtle nuances and gross feeling states to solve problems and adapt to their environment; moreover, wise individuals cultivate, nurture, and exercise positive social exchanges, which have benefits for both themselves and others, as indicated by associations with wisdom and measures of forgiveness and generativity, for instance (Taylor et al., 2011; Webster, 2010); finally, wise people, through their reflective, ironic, and perspective-taking abilities, are able
to generally maintain feelings of self-efficacy, satisfaction, meaning, and purpose in life.

Our findings further our understanding of the relationship between wisdom and mental health by examining hedonistic and eudaimonic aspects separately. Wise persons do in fact, like the majority of adults, seek out and appreciate pleasure in life, as indicated by the significant positive correlation between wisdom and hedonistic elements of well-being in this study. But more than that, wise persons pursue the good life through the pursuit of meaning and purpose, as illustrated by the stronger correlation between wisdom and eudaimonic elements of well-being reported here.

Finally, the regression results are important in that they mitigate earlier concerns (Staudinger, Dorner, & Mickler, 2005) that questionnaire measures of wisdom may be mostly explained by personality factors. We found that, indeed, the personality variables of neuroticism, extraversion, and openness to experience are related to wisdom and to mental health. Despite this, wisdom accounted for an additional amount of variance above and beyond personality and demographic variables combined (see Model 3, Table 2) and so it seems unlikely that the wisdom–mental health association can be explained away by personality traits. In fact, wisdom was found to have the strongest relation to mental health.

LIMITATIONS AND FUTURE DIRECTIONS

As with any cross-sectional study, certain limitations are apparent, the primary one being the age by cohort confound. Although the age differences in educational levels can be seen as a potential cohort effect, they only explain part of the curvilinear relationship between age and wisdom. Still, it is possible that the age differences we describe are due to different formative experiences of the three age groups (e.g., perhaps humor levels reflect parental training practices that differed across the earlier part of the 20th century) rather than true developmental changes per se. Longitudinal studies are needed to investigate such issues. Moreover, as Figure 1A–F makes clear, although there are significant trends for wisdom and its subcomponents as a function of age, it is important to acknowledge the large variability within age groups. In all three age groups, there is a wide deviation in scores, suggesting that even in the younger and older categories, a certain percentage of people are wise. This alerts us to the fact that there is much diversity in wisdom development; some of us will grow wiser as we age and some of us will not. Exploring the antecedent conditions and contemporary context of those individuals who do achieve this celebrated virtue is a fruitful area for future studies.

In addition, the causal relationship between wisdom and mental health cannot be determined. Perhaps good mental health is a necessary prerequisite for the emergence of wisdom, perhaps wisdom allows for the subsequent development of positive mental health, or perhaps some other variable (e.g., relationship quality) causes both wisdom and mental health to increase. Longitudinal studies are needed to disentangle such rival explanations. It is likely that the wisdom–mental health relationship is complex, dynamic, and dialectic. Despite this caveat, given the strong association between wisdom and mental health in this study, it seems reasonable for future research to explore if and how wisdom may be enhanced in persons throughout the life course.

For instance, recent conjectures on the teachability of wisdom (Ferrari & Potworowski, 2008) suggest that programs to enhance wisdom might pay important dividends in mental health for adults of all ages, perhaps in particular for older individuals. Such efforts can involve both structured, didactic approaches in school settings (Sternberg, Jarvin, & Reznitskaya, 2008), community activities such as intergenerational volunteering (Parisi et al., 2009), and therapeutic interventions aimed at increasing wisdom (Knight & Laidlaw, 2009). For instance, wisdom might be a relevant process measure in the context of life-review interventions (Korte, Bohlmeijer, Cappeliez, Smit, & Westerhof, 2012; Westerhof, Bohlmeijer & Webster, 2010). Wisdom has been linked to increased self-knowledge in the context of autobiographical reasoning (Randall, 2011). An interesting new line of research would then be to include wisdom as a possible mediating factor in experimental studies of the effects of life review.

Aging well requires adaptation and accommodation to the changing vicissitudes of life. Developing a mature, balanced, and eudaimonic orientation as we grow older may facilitate optimal aging, and wisdom is one means through which this may be accomplished.

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