Article

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Personality and Walking Speed Across Adulthood: Prospective Evidence From Five Samples

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Abstract

Walking speed is one marker of health in adulthood. Although personality may contribute to gait speed, there is limited longitudinal data on this association. Thus, the present study examined whether personality traits are prospectively associated with walking speed among middle aged and older adults. Participants were adults aged from 25 to 100 years old (N > 15,000) drawn from the Wisconsin Longitudinal Study Graduate and Sibling samples, the Midlife in the United States Survey, the Health and Retirement Study, and the National Health and Aging Trends Survey. Across most samples and in a meta-analysis, lower neuroticism and higher extraversion, conscientiousness, and openness at baseline were prospectively related to faster gait speed. In the HRS, lower neuroticism and higher extraversion, conscientiousness, and openness were related to slower gait speed decline. This study provides robust evidence that walking speed in adulthood reflects, in part, the individual's personality.

Keywords

personality, walking speed, adulthood

Walking (or gait) speed is considered one marker of an individual's health (Studenski, Perera, Wallace, et al., 2003; Studenski, Perera, Patel, et al., 2011). Longitudinal research finds consistently that slower gait is predictive of a range of deleterious outcomes, including poor mental health (Demakakos et al., 2013), higher risk of incident functional limitations and disability (Cesari et al., 2009; Perera et al., 2016), impaired cognition and incident dementia (Dumurgier et al., in press; Verghese, Wang, Lipton, Holtzer, & Xue, 2007), and ultimately higher mortality risk (Studenski, Perera, Patel, et al., et al., 2011). A large range of factors that contribute to gait speed have been identified from biological to social (Brunner et al., 2009; Rosso et al., 2015). The present study focused on the extent to which walking speed reflects individuals' characteristic ways of thinking, feeling, and behaving, that is, their personality traits.

There is extensive evidence for the association between personality and health across the life span (Friedman & Kern, 2014). Based upon the five-factor model (FFM; Digman, 1990), neuroticism (the tendency to experience distress and negative emotions), extraversion (the tendency to be sociable and to experience positive emotions), openness (the tendency to search for variety and to entertain new ideas), and conscientiousness (the tendency to be self-disciplined and organized) have been related to both self-reported and performance-based measures of physical and motor functions across adulthood (Buchman et al., 2013; Canada, Stephan, Jaconelli, & Duberstein, 2016; Krueger, Wilson, Shah, Tang, & Bennett, 2006; Stephan, Sutin, Canada, & Terracciano, 2017; Suchy, Williams, Kraybill, Franchow, & Butner, 2010; Terracciano, Stephan, Luchetti, Gonzalez-Rothi, & Sutin, in press; Tolea, Costa et al., 2012). Higher neuroticism and lower extraversion, openness, and conscientiousness are related to lower self-reported physical functioning (Canada et al., 2016; Duberstein et al., 2003; Suchy et al., 2010) and are risk factors for objectively assessed poor muscle strength (Tolea, Terracciano, Milaneschi, Metter, & Ferrucci, 2012), worse respiratory function (Terracciano, Stephan, Luchetti, Gonzalez-Rothi, & Sutin, in press), impaired aerobic capacity (Terracciano et al., 2013), and steeper motor declines (Buchman et al., 2013). The findings are more mixed for an association between agreeableness (the tendency to be cooperative and altruistic) and either self-reported or objective measures of physical function (Canada et al., 2016; Terracciano et al., in press).

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Few studies have examined the association between personality and walking speed. For example, Terracciano et al. (2013) examined personality correlates of walking speed at normal and maximal sustained speed on a 400-m course. Higher conscientiousness, extraversion, and openness and lower neuroticism were related to faster walking speed on both the normal and the maximal sustained pace; agreeableness was unrelated to test performance. To our knowledge, only one study has examined the association between personality and walking speed over time. Tolea et al. (2012) showed that conscientiousness mitigated the decline in walking speed over 3 years in a sample of older adults, whereas no association was found for openness; the other FFM traits were not examined in the Tolea and colleagues study.

Taken as a whole, current knowledge on the association between personality and walking speed is rather scarce. In particular, there is limited data on the extent to which personality prospectively predicts gait speed over time. Studies have either relied on relatively small or selective samples or have not examined all five major dimensions of personality. When predicting walking speed at follow-up or change in walking speed over time, we expect that all personality traits, with the exception of agreeableness, will be related to this marker of mobility and health. Indeed, lower neuroticism and higher extraversion, openness, and conscientiousness are robust predictors of more frequent physical activity (Sutin et al., 2016) and contribute to lower risk of chronic conditions over time (Weston, Hill, & Jackson, 2015). In turn, frequent physical activity and better health are related to faster gait speed (Ip et al., 2013; Tolea et al., 2010). Furthermore, these personality traits are also associated with less physiological dysregulation (Stephan, Sutin, Lucchetti, & Terracciano, 2016; Sutin, Stephan, & Terracciano, in press), better cardiorespiratory fitness (Terracciano et al., 2013), and better cognitive function (Luchetti, Terracciano, Stephan, & Sutin, 2016; Pearman, 2009). This physiological and cognitive profile has been found to mitigate the decline in gait speed (Gale, Allerhand, Sayer, Cooper, & Deary, 2014; Richardson, Glynn, Ferrucci, & Mackey, 2015; Verghese et al., 2011). The identification of a link between personality and walking speed may contribute to a better understanding of the motor signatures of the traits. Furthermore, this research can highlight a potential intermediary process in the association between personality and health outcomes. Finally, the identification of the personality correlates of walking speed may prove useful for advancing knowledge on the psychological makeup of individuals at risk of future incident mobility limitations.

Using five longitudinal samples of middle-aged and older adults, the present study examined the association between personality and walking speed over time. Based on the rationale described above, it was hypothesized that higher neuroticism would prospectively predict slower walking speed, whereas higher extraversion, openness, and conscientiousness would predict faster walking. In addition, the extent to which these traits were associated with changes in walking speed was examined in two of the five samples.

Method

Participants

Participants were drawn from the Wisconsin Longitudinal Study Graduate (WLSG) sample, the Wisconsin Longitudinal Study Sibling (WLSS) sample, the Midlife in the United States Survey (MIDUS), the National Health and Aging Trends Survey (NHATS), and the Health and Retirement Study (HRS). In these five samples, personality was assessed at baseline and walking speed was measured at follow-up. The present study included only participants from the five samples with complete data on baseline personality, demographic factors (age, sex, education, and race), and follow-up walking speed. The HRS and the NHATS also included a baseline assessment of gait speed.

The WLS is a study of 1957 Wisconsin high schools graduates and a selected sibling of some of the graduates. The WLS sample is broadly representative of older, White, non-Hispanic Americans who have completed at least a high school education. The present study used personality data collected in 1992–1993 for graduates and 1993–1994 for siblings. Walking speed was measured in 2011 for both samples. The final analyzed sample was composed of 4,603 individuals in the WLSG and from 2,090 participants in the WLSS (see Table 1). More information about both WLS samples and how to access the data can be found at http://www.ssc.wisc.edu/wlsresearch/. The MIDUS is a longitudinal study of U.S. adults. Personality data from the first wave (1994–1995, MIDUS I) were used, and walking speed was obtained from the Biomarker Project of the second wave (2004–2009, MIDUS II). The complete analyzed sample was composed of 990 participants (Table 1). More information about MIDUS and how to access the data can be found at http://www.midus.wisc.edu/.

The NHATS is a nationally representative prospective cohort study of Medicare enrollees aged 65 years and older. Participants were first interviewed in 2011 and are reinterviewed annually. Personality was first assessed in 2013 for one third of the sample and in 2014 for the second third. The present study used the combined personality data from these two waves and follow-up walking speed data were obtained in 2015. The analyzed sample was composed of 1,919 individuals who provided complete data on personality at baseline and walking speed at follow-up (see Table 1). Of this sample, 1,776 participants also provided walking speed data at baseline. More information about NHATS and how to access the data can be found at http://www.nhats.org/.

The HRS is a nationally representative longitudinal study of adults aged 50 years and older. An enhanced face-to-face interview was implemented starting in 2006 that included a psychosocial questionnaire with personality items. Half of the sample answered this questionnaire in 2006 and the other half answered it in 2008. Follow-up walking speed was measured in 2010 and 2012, respectively, for the 2006 and the 2008 samples. Walking speed was measured only among respondents aged 65 years or older. Data from both samples at baseline and follow-up were combined. The final sample was composed of

Table 1. Baseline Characteristics of the Samples and Correlations of Study Variables With Walking Speed at Follow-Up.

	WLSG			WLSS			MIDUS			HRS			NHATS		
Variables	*M* (%)	*SD*	$r_{\text{Walking Speed}}$	*M* (%)	*SD*	$r_{\text{Walking Speed}}$	*M* (%)	*SD*	$r_{\text{Walking Speed}}$	*M* (%)	*SD*	$r_{\text{Walking Speed}}$	*M* (%)	*SD*	$r_{\text{Walking Speed}}$
Age (years)	53.19	0.62	−.06**	52.53	6.84	−.30**	46.23	11.76	−.22**	71.19	6.80	−.30**	78.26	6.97	−.41**
Sex (% women)	54%	—	.14**	53%	—	.14**	55%	—	.11**	58%	—	.13**	57%	—	.16**
Race (% White)	100%	—	—	100%	—	—	95%	—	.01	89%	—	.17**	76%	—	.22**
Education	13.86	2.37	.22**	14.03	2.53	.23**	7.56	2.42	.18**	12.92	2.78	.23**	5.42	2.25	.32**
Walking speed (m/s)	1.02	0.25	—	1.03	0.26	—	1.11	0.22	—	0.83	0.29	—	0.77	0.26	—
Neuroticism	3.17	0.98	−.09**	3.22	0.95	−.09**	2.20	0.66	−.03	1.98	0.58	−.08**	2.18	0.83	−.05
Extraversion	3.86	0.89	.08**	3.78	0.91	.09**	3.21	0.55	.02	3.24	0.54	.12**	3.19	0.73	.11**
Openness	3.67	0.80	.11**	3.63	0.75	.09**	3.06	0.50	.02	2.96	0.54	.15**	2.87	0.81	.18**
Agreeableness	4.76	0.74	−.02	4.71	0.72	−.04	3.47	0.48	−.09*	3.55	0.45	.00	3.60	0.51	.02
Conscientiousness	4.87	0.67	.06**	4.76	0.71	.04	3.46	0.43	.05	3.39	0.45	.14**	3.28	0.68	.18**

Note. See Method section for differences in the assessment and coding of walking speed, personality, and education in each sample. $r_{\text{Walking Speed}}$ = Pearson correlation between baseline variables and walking speed at follow-up. Wisconsin Longitudinal Study Graduate (WLSG): $N = 4{,}603$; Wisconsin Longitudinal Study Sibling (WLSS): $N = 2{,}090$; Midlife in the United States Survey (MIDUS): $N = 990$; Health and Retirement Study (HRS): $N = 5{,}966$; National Health and Aging Trends Survey (NHATS): $N = 1{,}919$.
*$p < .01$. **$p < .001$.

5,966 participants (Table 1). In addition, 4,383 individuals also had walking speed data at baseline. More information about HRS and how to access the data can be found at http://hrsonline.isr.umich.edu/index.php. Attrition analysis are presented in the Online Supplemental Material.

Personality. In the WLSG and the WLSS, a 29-item version of the Big Five Inventory (John, Donahue, & Kentle, 1991) was used. Participants were asked whether they agreed or disagreed with descriptive statements using a scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). In the MIDUS and the HRS, personality traits were assessed using the Midlife Development Inventory (MIDI; Lachman & Weaver, 1997). In the MIDUS, participants were asked how much 25 adjectives that assessed neuroticism, conscientiousness, extraversion, openness, and agreeableness described themselves on a scale ranging from 1 (*not at all*) to 4 (*a lot*). The same scale was used in the HRS, with 1 additional item. Cronbach αs ranged from .58 to .80 across the four samples. A 10-item version of the MIDI was used in NHATS, using two adjectives for each of the five traits. Participants answered on the same 4-point scale.

Walking speed. Walking speed was measured using a 2.5-m course in the WLSG, the WLSS, and the HRS, a 15.24-m span in the MIDUS, and a 3-m span in the NHATS. In each study, participants were asked to walk at their normal pace. The best of two trials was taken. Participants with at least one performance were included. Speed was calculated by dividing the distance (in m) by the time recorded (in s). Participants with values 3 standard deviations above and below the mean were removed before conducting the analysis (WLSG: $N = 27$; WLSS: $N = 2$; MIDUS: $N = 9$; HRS: $N = 6$; NHATS: $N = 5$).

Covariates. In the five samples, age, sex, and education were specified as control variables *a priori*. Education was reported in years in the WLSG, the WLSS, and the HRS and measured on a scale ranging from ranging from 1 (*no grade school*) to 12 (*doctoral level degree*) in the MIDUS. In NHATS, a scale ranging from 1 (*no schooling completed*) to 9 (*master's professional or doctoral degree*) was used. Race was controlled in the MIDUS, the HRS, and the NHATS and was coded as 1 for *White* and 0 for *Other*.

Data Analysis

Regression analyses were conducted to examine the relation between personality and walking speed. In each sample, walking speed at follow-up was predicted by baseline personality, controlling for demographic factors. Each trait was examined separately and then simultaneously in supplemental analysis. A supplementary analysis was also conducted controlling for disease burden. The results from the five samples were combined in a random effects meta-analysis using sample size and *p* value from regression models with each trait examined separately. Heterogeneity of results across the five samples was examined using the *Q* test. The meta-analysis for each trait was conducted with the Comprehensive Meta-Analysis software (https://www.meta-analysis.com/). In the HRS and the NHATS, we also examined the association between personality and change in walking speed. Residualized change analyses using regression were conducted to predict walking speed at follow-up from baseline personality, demographic factors, and baseline walking speed. Significant findings would suggest that personality is associated with changes in walking speed because it represents the effect of personality after controlling for earlier levels of walking speed.

Due to the number of statistical tests, a more conservative approach was taken by setting p to <.01 for all analysis.

Results

Table 1 presents the correlations between the demographic variables and personality traits at baseline with walking speed at follow-up. Table 2 presents results of regression analyses with personality traits at baseline predicting walking speed at follow-up controlling for the demographic covariates. Comparison of Tables 1 and 2 suggests that the pattern of associations between personality and walking speed were similar with or without the demographic factors included. The results were mostly consistent with our hypothesis: The meta-analysis and findings from most of the individual samples indicated that lower neuroticism and higher extraversion, conscientiousness, and openness were related to faster gait speed. Additional analysis controlling for disease burden revealed no change in the overall pattern of relations in the five samples (see Supplemental Table S1). When all traits were entered simultaneously, conscientiousness remained a significant predictor of walking speed across all samples, and higher extraversion was related to faster speed in all but one of the samples (see Supplemental Table S2).

The effect size of the significant associations between personality traits and walking speed were about one third the effect of age and were similar or larger than the effect of sex. For example, in the HRS, the effect of conscientiousness (β_s = .11) was about one third of the effect of age ($\beta_s = -.28$), and 1 *SD* difference on conscientiousness corresponded roughly to an age difference of 2.5 years in walking speed. To provide an additional illustration of effect sizes, Figure 1 depicts walking speed among individuals with scores on extraversion and conscientiousness 1 *SD* above and below the mean. Adjusted for demographic factors, individuals with higher extraversion walked on average 0.06 m/s faster than those with lower extraversion ($.09 < d < .32$; weighted average $d = .26$). Similar differences were observed between individuals with higher and lower conscientiousness ($.11 < d < .30$; weighted average $d = .25$).

In additional analyses, the moderating role of sex and age in the association between personality and walking speed was tested (see Online Supplemental Material). These analysis revealed that, despite some significant interactions, neither sex nor age were consistent moderators across the five cohorts (see Online Supplemental Material).

Finally, the longitudinal analysis in the HRS revealed that higher extraversion, conscientiousness, and openness were related to slower decline over the 4-year follow-up, whereas neuroticism was associated with steeper decline in walking speed (Table 3). The association between openness and change in walking speed was reduced to nonsignificant in a model with all traits included simultaneously (see Online Supplemental Material; Table 3). In the NHATS, none of the traits was associated with walking speed changes from baseline to follow-up.

Table 2. Summary of Regression Analysis Predicting Follow-Up Walking Speed From Baseline Personality.

Variables	WLSG[a]	WLSS[a]	MIDUS[b]	HRS[b]	NHATS[c]	Meta-Analysis	
						Random Effect	Heterogeneity Q
Neuroticism	−.05** [−0.080, −0.023]	−.06* [−0.105, −0.024]	−.06 [−0.120, 0.003]	−.08** [−0.104, −0.057]	−.03 [−0.073, 0.004]	−.06** [−0.083, −0.048]	4.65
Extraversion	.07** [0.045, 0.101]	.09** [0.050, 0.130]	.06 [0.001, 0.121]	.11** [0.088, 0.134]	.07** [0.030, 0.105]	.09** [0.073, 0.108]	4.69
Openness	.05* [0.018, 0.078]	.01 [−0.034, 0.052]	−.00 [−0.066, 0.056]	.08** [0.053, 0.101]	.09** [0.047, 0.124]	.05* [0.018, 0.083]	15.39*
Agreeableness	.02 [−0.008, 0.049]	.02 [−0.023, 0.058]	−.04 [−0.099, 0.024]	.03 [0.007, 0.055]	.03 [−0.008, 0.069]	.02 [0.005, 0.040]	4.63
Conscientiousness	.06** [0.030, 0.086]	.06* [0.023, 0.103]	.06 [0.001, 0.122]	.11** [0.082, 0.129]	.11** [0.070, 0.146]	.08** [0.060, 0.106]	7.70

Note. Coefficients are standardized regression coefficients. 95% confidence intervals are in parentheses. Wisconsin Longitudinal Study Graduate (WLSG): N = 4,603; Wisconsin Longitudinal Study Sibling (WLSS): N = 2,090; Midlife in the United States Survey (MIDUS): N = 990; Health and Retirement Study (HRS): N = 5,966; National Health and Aging Trends Survey (NHATS): N = 1,919.
[a]Adjusted for age, sex, and education. [b]Adjusted for age, sex, education, and race. [c]Adjusted for age, sex, education, race, and time elapsed between assessments.
*p < .01. **p < .001.

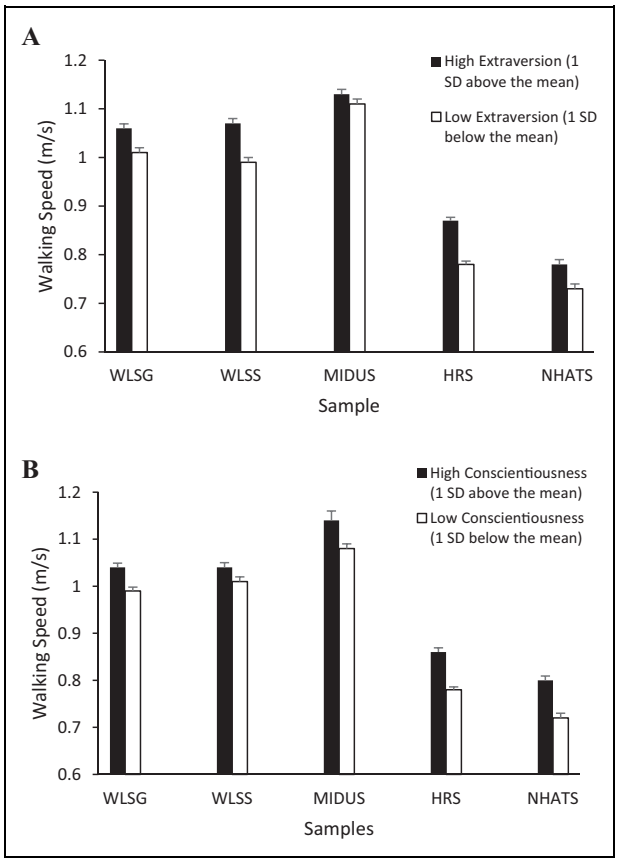

Figure 1. Walking speed for high (1 *SD* above the mean) and low (1 *SD* below the mean) extraversion (Panel A), and conscientiousness (Panel B) in the five samples, adjusted for demographic factors within samples. In the Wisconsin Longitudinal Study Graduate (WLSG), the Wisconsin Longitudinal Study Sibling (WLSS), and the Health and Retirement Study (HRS), walking speed was measured using a 2.5-m course. It was measured with a 15.24-m span in the Midlife in the United States Survey (MIDUS) and with a 3-m span in the National Health and Aging Trends Survey (NHATS). Error bars are standard errors.

Table 3. Summary of Regression Analysis Predicting Walking Speed Changes From Baseline Personality.

Variables	HRS[a]	NHATS[b]
Neuroticism	−.05**	−.03
	(−0.075, −0.023)	(−0.057, 0.000)
Extraversion	.08**	.01
	(0.050, 0.103)	(−0.020, 0.036)
Openness	.04*	.03
	(0.013, 0.068)	(0.003, 0.060)
Agreeableness	.01	.01
	(−0.018, 0.036)	(−0.015, 0.041)
Conscientiousness	.06**	.03
	(0.032, 0.085)	(−0.000, 0.056)

Note. Health and Retirement Study (HRS): $N = 4,383$; National Health and Aging Trends Survey (NHATS): $N = 1,776$.
[a]Adjusted for age, sex, education, race, and baseline walking speed. [b]Adjusted for age, sex, education, race, baseline walking speed, and time elapsed between assessments.
*$p < .01$. **$p < .001$.

Discussion

Based on five large longitudinal samples of middle-aged and older adults, the present study found that personality prospectively predicts walking speed. Consistent with our hypotheses, higher neuroticism was associated with slower gait speed, whereas higher extraversion, openness, and conscientiousness were related to faster speed over time, with or without controlling for demographic factors. The results were robust despite differences among the five cohorts in terms of age and other demographic characteristics, the personality and walking speed measures, and for length of follow-up. It is of note that similar associations were observed over both short-term (1 year) and long-term (up to 18 years) intervals. These traits were also related to changes in gait speed over the 4-year follow-up in the HRS but not the 1-year follow-up in the NHATS. These findings point to the relevance of psychological traits for the physical functioning of older adults. In particular, it provides the most comprehensive account to date of the link between personality and walking speed.

Extraversion and conscientiousness were the most consistent personality correlates of walking speed. Active and enthusiastic individuals and those with self-discipline and organization walked faster at follow-up and declined less in gait speed over time in the HRS. This finding extends past reports of a cross-sectional association between higher extraversion and faster speed (Terracciano et al., 2013; Tolea et al., 2010) by showing that this association is not dependent on the two variables measured at the same time. As expected, neuroticism was associated with slower gait speed at follow-up and steeper decline over time in the HRS. Also consistent with our hypothesis, openness to experience was related to walking faster. There was, however, heterogeneity across samples, perhaps due to differences in the personality measures used or the characteristics of the samples. Past research has found a cross-sectional association between openness and faster walking speed (Tolea et al., 2010); this study found that this relation persists over an extended period of time. As expected, we found no consistent relation between agreeableness and gait speed across the five samples.

These findings add to existing research on the association between neuroticism, extraversion, openness, conscientiousness and broader measures of mobility and physical functioning (Agmon & Armon, 2016; Buchman et al., 2013; Canada et al., 2016; Krueger et al., 2006). These traits are related to risk of frailty, a geriatric syndrome characterized by loss of muscle mass and declines in energy and physical function (Stephan et al., in press). The behavioral, cognitive, and health profiles of extraverted, open and conscientious individuals have been found to contribute to the preservation of mobility across adulthood, whereas individuals with higher neuroticism have more risky health-related profiles. Extroverted, open, and conscientious individuals, for example, are more physically active (Sutin et al., 2016) and are less likely to suffer from either chronic physical health conditions (Weston et al., 2015) or depressive symptoms (Hakulinen et al., 2015). In contrast,

neuroticism is associated with a range of health-damaging behaviors, such as smoking (Hakulinen et al., 2015) and sedentary behavior (Sutin et al., 2016) and higher disease burden (Weston et al., 2015) and depressive symptoms (Hakulinen et al., 2015) that may result in walking limitations and slower speed. In addition, higher conscientiousness and openness are associated with better cognitive function, whereas neuroticism is related to worse cognition (Luchetti et al., 2016) and extraversion is related to faster processing speed (Pearman, 2009). Neuroticism, extraversion, openness, and conscientiousness may also be related to gait speed through biological pathways. Individuals with lower neuroticism, higher extraversion, openness, and conscientiousness, for example, experience less physiological dysregulation (Stephan et al., 2016) and have better cardiorespiratory fitness and energy (Terracciano et al., 2013), which are associated with faster walking speed (Richardson et al., 2015; Rosso et al., 2015).

The association between personality traits and walking speed among middle-aged and older adults suggest that how fast an individual walks can be considered an expression or a motor signature of personality. Specifically, extroverted, conscientious, open, and emotionally stable people are characterized by faster gait. Furthermore, walking speed may function as an intermediate, motor marker of the risk of poor outcomes associated with some personality traits. Indeed, slow gait is predictive of a higher risk of functional limitations (Cesari et al., 2009), incident dementia (Dumurgier et al., in press), and higher mortality risk (Studenski, Perera, Patel, et al., et al., 2011). Personality traits in general, and high neuroticism and low conscientiousness in particular, are related to difficulties in activities of daily living (Suchy et al., 2010) and risk of Alzheimer's disease (Terracciano et al., 2014) and mortality (Jokela et al., 2013). Thus, it is likely that the risk of poor outcomes associated with high neuroticism and low conscientiousness may manifest at the motor level, through slower gait.

The present study has several strengths including the examination of five large samples, prospective analyses, long-term follow-up, and the investigation of all five major dimensions of personality. Each sample was large enough to provide sufficient power to detect small effect sizes. However, there are also several limitations. The observational design of this study limits the possibility of determining causal relations. Although personality was considered a predictor of walking speed, future research may consider the potential reciprocal relation between personality and gait speed. Despite the finding of a consistent association between personality and walking speed over different periods, from 1 to almost 20 years, the size of this association was relatively small. However, walking is a complex behavior that reflects a wide range of biological, clinical, behavioral, cognitive, and environmental factors, and each factor has a small effect. Therefore, personality is unlikely to have a strong effect. In addition, the personality measures were different across samples and all of them were brief. Detailed personality questionnaires are needed to examine the personality facets associated with walking speed. Finally, although the present study used regression to test for the link between personality and changes in walking speed, other ways of modeling change over two waves, such as latent change score models within a structural equation model framework, may prove useful.

In conclusion, this study provides evidence that personality traits prospectively predict walking speed and walking speed decline among middle-aged and older adults. The findings were mostly consistent across the five cohorts and personality was a prognostic factor for walking speed performance across short and long-term follow-up, up to 18 years. Thus, personality assessments may provide some information about who is at risk of poor physical function across adulthood, which may be targeted by preventive programs designed to reduce mobility limitations and ultimately promote independent living in older age.

Declaration of Conflicting Interests

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Supplemental Material

The supplemental material is available in the online version of the article.

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