

Jonathan Shemesh, Ella Schwartz and Howard Litwin

3 Personality and physical health among older Europeans

-
- ▶ Personality is associated with an array of health indicators in older European adults.
 - ▶ The strongest and most consistent personality-level correlates of good health are high conscientiousness and low neuroticism.
 - ▶ Personality testing can be used to assess the health risks of older people.
-

3.1 Introduction

When considering the determinants of health, we tend to think first about genetics and lifestyle, especially long-term behavioural patterns such as physical activity and diet. However, current evidence suggests that personality – an individual’s habitual way of viewing and interacting with the world – also exerts significant effects on health throughout the lifespan (Murray and Booth 2015). Personality is partly heritable, fairly stable throughout adult life and strongly predictive of health and risk behaviours (Murray and Booth 2015; Strickhouser et al. 2017). Using new data from SHARE, this chapter examines the relationship between personality and health among older Europeans.

3.2 The Big Five Personality Factors

As noted in the previous chapter by Erlich and Litwin, the prevailing framework for understanding individual differences in personality is the Five Factor Model of Personality (McCrae and Costa 1987). This framework defines personality along five distinct dimensions, dubbed the Big Five: *openness to experience*, *conscientiousness*, *extraversion*, *agreeableness* and *neuroticism* (acronymised as OCEAN; McCrae and Costa 1987).

Of the five factors, the ones most strongly and consistently associated with health are *conscientiousness* (Bogg and Roberts 2012) and *neuroticism* (Lahey 2009). *Conscientiousness* refers to an individual’s tendency to be self-controlled, disciplined, responsible, organised and purposeful (McCrae and Costa 1987).

People with low conscientiousness have been shown to have increased risk for health problems, including diabetes, high blood-pressure, stroke and a higher risk of mortality (Bogg and Roberts 2012).

Neuroticism denotes an individual's propensity for frequently and intensely feeling negative emotions, such as anxiety, depression, anger and guilt (McCrae and Costa 1987). Depression and anxiety – both mood disorders highly correlated with neuroticism – have been found to be associated with compromised immune function, abnormal cardiac function and increased risk of mortality (Lahey 2009). Even after controlling for these mood disorders, high levels of neuroticism are linked to numerous health problems, including cardiovascular disease, atopic eczema, asthma and irritable bowel syndrome (Lahey 2009).

The other three personality factors – extraversion, agreeableness and openness to experience – have been found to affect health less consistently and to a lesser degree. They also have been less studied (Strickhouser et al. 2017).

Despite the importance of personality for late-life health, large-scale data allowing for the examination of the links between personality and health among older Europeans are largely lacking. However, the SHARE survey introduced a personality inventory for the first time through the implementation of Wave 7 in 2017. Consequently, personality data can now be paired with a broad range of indicators in SHARE concerning the health of people aged 50 and older in some 27 European countries and Israel.

3.3 Personality and health among older Europeans

Using the new SHARE data, this chapter presents the results of a preliminary examination of the association between personality and physical health among older Europeans. Personality was measured using a 10-item abbreviated version of the Big Five Inventory, which includes two items per personality factor rated on a scale from one (low) to five (high). A person's score on each personality trait consists of the average of the pair of items (one of them reverse coded) by which it is measured (for more details, see the previous chapter by Erlich and Litwin). To assess physical health, we observed five different measures available in SHARE: (1) number of physician-diagnosed diseases; (2) mobility limitations (ML); (3) difficulties in activities of daily living (ADL); (4) instrumental activities of daily living (IADL); and (5) self-rated health (SRH).

The first four measures were computed by summing the total number of diseases/limitations reported by the respondents. To analyse these outcomes, we

applied Poisson regressions for the count variables. The last measure (self-assessment of health) was rated by participants on a scale from one to five, where higher scores represent better health. This outcome was analysed using an OLS regression. All analyses controlled for the possible effects of other key variables known to affect health, namely, age, gender, marital status, financial capacity, years of education and country of residence. We simultaneously entered all five personality factors into all regression models to account for any inter-correlations among the traits.

The sample consisted of individuals from all SHARE countries who had complete data on the variables of interest. We pooled those who were married or in a civil partnership into one group (*partnered*) and those who were divorced, widowed or never married into another group (*single*). To assess financial capacity, we used a single item probing respondents' ease in 'making ends meet' with their monthly household income. The final sample consisted of $N = 57,982$.

The Poisson regressions showed high conscientiousness to be associated with fewer physician-diagnosed diseases (IRR = 0.96), less mobility limitations (IRR = 0.90), and fewer difficulties with activities of daily living (ADL; IRR = 0.80) and instrumental activities of daily living (IADL; IRR = 0.79; all $p < 0.01$), after taking account of all control variables. The OLS regression showed that high conscientiousness is also related to better overall self-assessments of health (Beta = 0.05; $p < 0.01$). Neuroticism was characterised by the converse pattern, with higher levels of neuroticism being associated with more physician-diagnosed diseases (IRR = 1.14), more mobility limitations (IRR = 1.20) and greater difficulty with activities of daily living (IRR = 1.33) and instrumental activities of daily living (IRR = 1.30; all $p < 0.01$). In addition, high neuroticism was associated with poorer self-assessments of health (Beta = -0.17 ; $p < 0.01$) The results of the Poisson regressions are plotted in Figure 3.1.

We also found extraversion, agreeableness and openness to experience as being associated with health, although to a lesser degree and not as consistently as conscientiousness and neuroticism. Extraversion was related to fewer mobility limitations, fewer difficulties with instrumental activities of daily living and better self-rated health (ML: IRR = 0.99; IADL: IRR = 0.96; SRH: Beta = 0.03; all $p < 0.01$). Openness to experience was linked to fewer mobility limitations, fewer difficulties with (instrumental) activities of daily living and better self-rated health (ML: IRR = 0.97; ADL: IRR = 0.97; IADL: IRR = 0.92; SRH: Beta = 0.03; all $p < 0.01$). In contrast, agreeableness was related to greater mobility limitations and greater difficulty with (instrumental) activities of daily living (ML: IRR = 1.03; ADL: IRR = 1.02; IADL: IRR = 1.08; all $p < 0.01$, see Figure 3.1).

What explains these results? Conscientious people are thought to stay healthier by maintaining certain health-enhancing habits and avoiding harmful

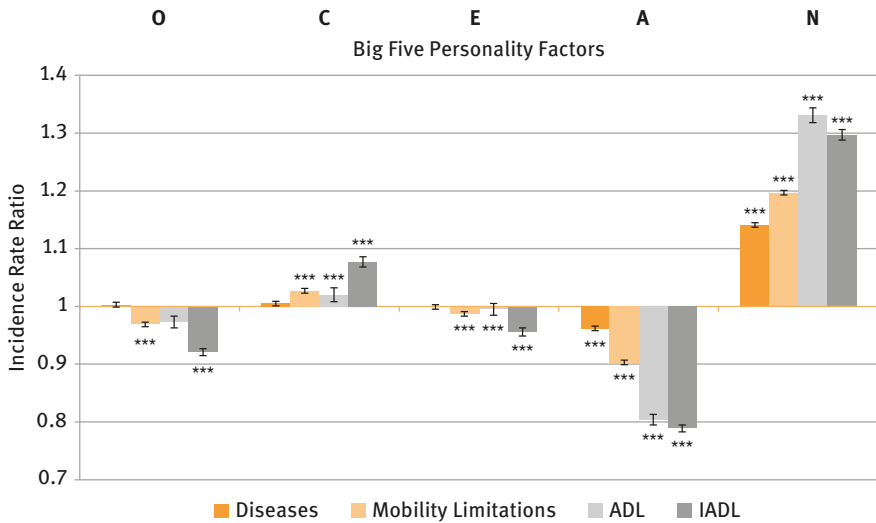


Figure 3.1: Association between Big Five personality traits and physical health
 O = Open to experience; C = Conscientiousness; E = Extraversion; A = Agreeableness;
 N = Neuroticism

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Adjusted for age, gender, marital status, years of education, financial capacity and country; error bars denote standard error

Source: SHARE Wave 6 release 6.1.0, Wave 7 release 0.

ones. They tend to exercise, maintain a healthy diet and undergo routine health screening. They also tend to minimise their exposure to stress and avoid excessive drinking and smoking (Murray and Booth 2015; Bogg and Roberts 2012). As such, conscientious people are active participants in their own health promotion throughout the life course.

Individuals who are high in neuroticism presumably experience higher levels of stress for more prolonged periods. Stress has been hypothesised to play a role in the development of chronic diseases (Lahey 2009). Consequently, the stress experienced by those who are more highly neurotic may be the reason for their poorer physical health in later life.

What about the last three traits? As previously stated, extraversion, agreeableness and openness to experience have not been consistently found to affect health and, thus, have also not been the focus of much study. Explaining these associations should be the subject of future research. For now, we offer several possibilities worth exploring.

In personality research, extraverts score high on items measuring descriptions such as ‘sociable, fun-loving, affectionate, friendly, and talkative’ (McCrae

and Costa 1987, p. 87). These individuals likely inhabit broad and highly developed social networks and enjoy the full gamut of their benefits. Thus, their better health may be the result of the abundant emotional and material support at their disposal, which buffers the effects of stress and provides the necessary resources to maintain a healthy lifestyle and cope with disease.

How might openness to experience lead to better health? Openness may play a role in shaping attitudes to behavioural change. Health issues often present people with the challenge to adapt. The cognitive and motivational flexibility associated with high openness could be a helpful resource for older adults in adapting their lifestyles to health issues and other challenges that they might face. Such adaptations may include changing one's lifelong patterns of diet and exercise, taking up new hobbies or learning new ways to do old things.

Finally, our finding that agreeableness is associated with slightly poorer health is slightly more difficult to explain (although not unprecedented; see Strickhouser et al. 2017). Agreeable people are described as sympathetic, generous, lenient and courteous. The opposite pole on this dimension ('antagonism') is occupied by people best described as irritable, mistrustful, callous, unsympathetic, uncooperative and rude (McCrae and Costa 1987). Could it be that antagonistic people, with their hostile interpersonal style, enjoy better health? McCrae and Costa point out that 'unappealing as antagonism may be, it is necessary to recognise that extreme scores on the agreeable pole may also be maladaptive' (McCrae and Costa, 1987, p. 88). Too-high agreeableness can manifest as being dependent, submissive and self-sacrificing. High agreeableness may take its long-term toll in the form of burnout, possibly explaining why agreeableness in our sample was associated with slightly poorer health.

A last point to keep in mind when interpreting these results is that health status is one of the most important factors that affects changes in personality (Murray and Booth 2015). In a pooled analysis encompassing several longitudinal samples, the onset of chronic diseases was found to be accompanied by a decline in extraversion, conscientiousness and openness to experience, and an increase in neuroticism (reported in Murray and Booth, 2015).

3.4 Concluding remarks

Our study provides evidence from an unprecedented large-scale survey of older Europeans that personality is, indeed, related to physical health in late life. The policy implication of this important finding is that personality testing may be a cost-effective strategy for assessing health risk in older adults. That is, knowing

an individual's personality can give us an idea of his or her health behaviours and stress levels and, by extension, an indication of their vulnerability to disease and disability. The inclusion of short personality tests, such as the one utilised in this study, may help identify and address these vulnerabilities in advance. Future research should work to establish the benefits of such an approach.

Our findings also suggest several fruitful avenues for research using the SHARE dataset. For instance, does personality relate to health differently across countries? Can different health policies in different countries compensate for vulnerabilities created by low conscientiousness and high neuroticism? To what extent are personality-related differences in health attributable to health-care utilization? On another level, we could ask how one's perceived level of social support interacts with the effects of personality on health and whether social support (emotional or material) buffers against the effects of low conscientiousness and high neuroticism. These topics represent areas worthy of further inquiry.

References

- Bogg, T. and Roberts, B.W. (2012). The case for conscientiousness: Evidence and implications for a personality trait marker of health and longevity. *Annals of Behavioral Medicine*, 45(3), pp. 278–288.
- Lahey, B.B. (2009). Public health significance of neuroticism. *American Psychologist*, 64(4), pp. 241–256.
- McCrae, R.R. and Costa, P.T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of personality and social psychology*, 52(1), pp. 81–90.
- Murray, A.L. and Booth, T. (2015). Personality and physical health. *Current Opinion in Psychology*, 5, pp. 50–55.
- Strickhouser, J.E., Zell, E. and Krizan, Z. (2017). Does personality predict health and well-being? A metasynthesis. *Health Psychology*, 36(8), pp. 797–810.