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PERSONALITY AND PREVENTIVE HEALTHCARE UTILISATION: EVIDENCE FROM THE IRISH LONGITUDINAL STUDY ON AGEING

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ABSTRACT

There is extensive empirical evidence that personality is associated with many outcomes and behaviours, such as educational outcomes, labour market participation, savings behaviour, health behaviours, physical health status and mortality. Use of preventive healthcare services (e.g., vaccinations, screening, *etc*.) is a potential pathway explaining the link between personality and health, and is an important component of healthy ageing. We examine the association between personality traits (the 'Big Five') and a variety of preventive healthcare utilisation measures in the older population. Using data from the Irish Longitudinal Study on Ageing (TILDA), we estimate Poisson models of preventive healthcare utilisation (influenza vaccination, blood cholesterol test, breast lump check, mammogram, prostate examination, prostate-specific antigen (PSA) test). We find that openness to experience is a significant predictor of breast lump check and mammogram in women aged 65+ after adjustment for other confounders and multiple hypothesis testing. While uptake of many preventive healthcare services remains below national recommendations for the older population, with the exception of breast lump checks and mammograms for women aged 65+, we find little evidence to link this heterogeneity in uptake to personality.

KEYWORDS: Preventive Healthcare; Personality; Older Population; Ireland

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1 Introduction

There is extensive empirical evidence that personality is associated with many life outcomes and behaviours such as mortality, physical and mental health, life satisfaction, educational and labour market success and financial wellbeing [1-5]. It is generally agreed that personality comprises a number of broad dimensions that represent dispositional characteristics that reflect relatively enduring patterns of thoughts, feelings and behaviours [6]. However, despite the accumulating evidence that such traits prospectively predict adult health outcomes, there are fewer studies exploring the mechanisms by which they do so [1]. Personality may be linked to health outcomes in a variety of ways [7]. First, personality may reflect differences in biological systems, which are linked to the development and progression of disease. For example, an extensive literature shows that neuroticism represents a major risk factor for depression [8]. Second, personality may reflect how individuals respond to illness, via health-seeking behaviour, treatment adherence, social support, *etc*. [9]. Third, personality may be related to health-promoting or health-damaging behaviours such as smoking, alcohol consumption, vaccination uptake, *etc*. [7, 10, 11]. Fourth, personality may be associated with protective socio-demographic characteristics (stable marriages, labour market success, *etc*.) that are in turn associated with positive health outcomes [12]. These mechanisms may not be not mutually exclusive and may work together [13].

Use of preventive healthcare services (e.g., vaccinations, screening, *etc*.) is one such health-promoting behaviour. With increasing pressure on healthcare budgets as a result of ageing populations and the growing burden of chronic, non-communicable diseases, many countries are realigning healthcare systems to focus on prevention and health promotion [14]. While preventive healthcare services are an important element of healthcare across the life course, preventive healthcare services are a crucial component of healthy ageing [15]. In Ireland, there is concern over the relatively low uptake of many recommended services such as influenza vaccination for those aged 65+ [16]. In this context, an understanding of the determinants of preventive healthcare behaviour in the older population can be important for policymakers and practitioners in devising public health information campaigns, identifying target populations, encouraging uptake, *etc*.

Personality is broadly defined as patterns of behaving, thinking and feeling [17]. The most widely accepted taxonomy of personality traits is the ‘Big Five’ or five-factor model [17]; it has been

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replicated across cultures and developmental stages of the life course [18]. Each factor summarises a large number of distinct, more specific, personality characteristics. The five factors are:

- Neuroticism or emotional stability (the degree to which a person experiences the world as threatening and beyond his/her control);
- Extraversion (reflects positive mood, optimism, *etc*. and the degree to which a person needs attention and social interaction);
- Openness to experience (the degree to which a person needs intellectual stimulation, change and variety);
- Agreeableness (the degree to which a person needs pleasant and harmonious relationships with others);
- Conscientiousness (reflects planning behaviour and future orientation, and the degree to which a person is willing to comply with conventional rules, norms and standards) [17].

We need to consider whether personality is truly fixed over time/life course. First, there is good evidence summarised in [19] that personality traits have substantial heritability. Second, in the psychological literature, there seems to be general agreement that personality trait scores are more variable before 30 years of age, but tend to stabilise thereafter [20-22].

As noted, despite the steady accumulation of evidence that personality is associated with health outcomes [7, 23], there has been less focus in the literature on possible mechanisms. The majority of previous research focuses on health behaviours (e.g., smoking, diet and activity patterns, etc.) as a potential pathway linking personality and health outcomes such as mortality [11]. Previous literature on the association between personality and preventive healthcare use is limited, particularly for the older population. [24], using data from the US Health and Retirement Study (HRS), found that a higher purpose in life was associated with an increased odds of undergoing cholesterol testing, colonoscopy, mammogram and pap smear (women) and prostate testing (men), but associations with influenza vaccination were non-significant. [25], using data from the English Longitudinal Study on Ageing (ELSA), found that while conscientiousness was positively associated with participation in bowel screening after adjustment for age and sex, the significant relationship disappeared after adjustment for additional covariates. [26] used data from the Wisconsin Longitudinal Study to examine the association between the 'Big Five' personality traits and the probability of receiving an influenza vaccination, cholesterol test and mammogram (for insured individuals with at least one medical visit in the past year). After adjustment for other covariates, they found that conscientiousness was associated with a significantly higher probability of receiving all three

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services, while being more agreeable was associated with a higher probability of having an influenza vaccination and a mammogram. Being more extroverted was associated with a higher probability of cholesterol testing, while more openness was associated with a higher probability of influenza vaccination. [27] examined use of complementary and alternative medicine (CAM) services in the Midlife Development in the United States Survey (MIDUS), and found that openness was significantly associated with use of CAM services. [28] found that openness was the only 'Big Five' personality trait associated with preventive health check-ups in a sample of older Japanese individuals.

The purpose of this paper is therefore to examine the association between personality traits and preventive healthcare utilisation in the older population in Ireland. We build on previous studies examining personality and preventive healthcare use in the older population by combining data on the 'Big Five' with a comprehensive set of preventive healthcare services, and adjusting the results for other confounders and multiple hypothesis testing. The available literature on the association between personality and preventive healthcare utilisation is limited and provides little guidance on testable hypotheses, but research in other domains provides some intuition about likely effects [5, 7, 11]. Based on the characteristics associated with conscientiousness such as self-discipline, dutifulness and competence, and previous research linking conscientiousness with preventive healthcare utilisation [25, 26], we hypothesise that conscientiousness will be associated with an increased probability of preventive healthcare utilisation. Reflecting previous findings [26], we also expect openness to experience, which reflects intellectual stimulation, enjoyment of novelty, change and variety, to be associated with use of preventive healthcare services. In terms of agreeableness, [26] found that being more agreeable was associated with a higher probability of having an influenza vaccination and a mammogram. [29] notes that neuroticism may have negative and positive implications for health; on the one hand vigilance about germs, symptoms needing attention, medical developments and co-operation with treatment may encourage healthcare utilisation while on the other hand, pessimism, resentment and anxiety could lead individuals to give up on medical regimes, turn to substance abuse and avoid interpersonal assistance that can protect health. We expect neurotics to be excessively concerned about their health and therefore expect higher utilisation. Due to the lack of previous research findings regarding extraversion and preventive healthcare utilisation, we do not have a clear testable hypothesis in relation to extraversion.

The remainder of the paper is structured as follows. Section 2 describes the data employed in greater detail and outlines the statistical methods used in this paper. Section 3 presents empirical results and Section 4 discusses the findings.

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2 Methods

2.1 Data

To investigate the impact of personality on preventive healthcare utilisation among the older population, we use data from the first two waves of the Irish Longitudinal Study on Ageing (TILDA). TILDA is a nationally representative sample of community-dwelling individuals aged 50 years and over in Ireland. Data collection for the first wave took place over the period October 2009 to February 2011, when 8,175 individuals aged 50+ were sampled. Wave 2 took place between April 2012 and January 2013.

The dataset contains a rich set of variables on the health and socio-economic circumstances of older people. Data were collected via computer-aided personal interviewing (CAPI), and participants also completed a self-completion questionnaire (SCQ) which was designed to collect more sensitive information. As personality was assessed in Wave 2 only, we use data on personality and our outcome variables (i.e., our six indicators of preventive healthcare utilisation) from Wave 2. However, data on many of our control variables (e.g., childhood health, cognitive ability) is only available from Wave 1, so our additional control variables (detailed below) are all measured at Wave 1. This results in a final sample of just over 5,500 observations for analysis (sample sizes vary depending on the outcome of interest).

Dependent Variables

TILDA contains detailed information on various aspects of healthcare utilisation. All information on healthcare utilisation is self-reported by the participant. In total, we examine six indicators of preventive healthcare utilisation (influenza vaccination; cholesterol test; breast lump check; mammogram; prostate examination; PSA blood test). Table A1 in the Appendix illustrates current Irish guidance in relation to these various preventive healthcare services. As there are specific recommendations and incentives in relation to influenza vaccination (vaccine free for all adults aged 65+), and mammogram (free appointments for all women aged 50-64), we stratify the analyses by two broad age groups, namely, 50-64 years and 65+ years.

For each measure of preventive healthcare, the relevant question refers to ‘ever had’ the relevant service/test, which results in binary outcome variables. As illustrated in Table A2, sample means (i.e., the proportion of the population who have ‘ever’ had the particular service/test) differ significantly between those aged 50-64 and those aged 65+ for all measures of preventive healthcare utilisation,

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therefore justifying the stratified analyses. With the exception of breast lump checks and mammograms, those aged 65+ have significantly higher utilisation of all types of preventive healthcare than those aged 50-64 years of age.

Independent Variables

The key independent variables of interest are the 'Big Five' personality factors. In TILDA, information on personality is gathered via the NEO-Five Factor Inventory (NEO-FFI) questionnaire, which was administered as part of the self-completion questionnaire at Wave 2. The NEO-FFI is a 60-item personality inventory designed to assess the 'Big Five' personality dimensions of neuroticism, extroversion, openness to experience, agreeableness and conscientiousness, and is commonly used in research on personality and health in older adults [30]. Responses to each item are scored on a five-point Likert scale ('strongly disagree' to 'strongly agree'), resulting in a 0-48 score for each trait. To aid interpretation of regression results, scores for each trait are expressed as z-scores so each trait has a mean of 0 and a standard deviation of 1. Table A3 describes the measures of personality employed in TILDA, provides item examples for each scale, and presents summary statistics and coefficient alphas.

In analysing the impact of personality on preventive healthcare utilisation, it is important to control for other differences in observable characteristics that may influence use of preventive healthcare services [31]. Ideally, these characteristics would be predetermined so that they are not influenced by personality [32]. One of the major strengths of TILDA is the richness of the information on all aspects of older peoples' lives, enabling us to include a comprehensive set of controls in our models, while recognising that not all are predetermined. We adopt the Anderson framework in choosing appropriate control variables, which highlights the importance of predisposing, enabling and health need variables in explaining healthcare utilisation [33]. Predisposing factors include indicators for age, sex, education level, marital status and highest level of education completed. Enabling characteristics include health insurance status (both public and private). Our indicators of 'health need' include self-assessed health, both current and in childhood; an indicator for parental survival (no parents alive, at least one parent alive); presence of a chronic illness; presence of problems with an activity of daily living (ADL) or instrumental activity of daily living (IADL); smoking behaviour (never, past, current); and an indicator for problematic drinking. Correlations between the various health indicators were checked before inclusion in the models. Since openness to experience is moderately associated with cognitive ability [2], we therefore include an indicator of general

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cognitive ability, the delayed recall score. Table A4 in the Appendix present variable definitions and summary statistics.

2.2 Statistical Methods

We employ Poisson regression methods to assess the association between personality and preventive healthcare utilisation. While our outcomes variables are all binary, logistic regression methods are inappropriate in this case due to the high prevalence of each of our measures of preventive healthcare utilisation [34, 35] (see also Table A2). Briefly, for each measure of preventive healthcare utilisation *h*, we estimate models of the form*:*

$$h_i = \propto + \beta P_i + \gamma X_i + \varepsilon_i$$

where *i* indicates the individual, *P* indicates personality and *X* indicates all other control variables, as set out in Table A4. Results are presented in the form of incident risk ratios, with robust standard errors.

With six outcomes and five personality traits for each of our two sub-samples, we must adjust our results for multiple hypothesis testing. In order to be able to identify as many significant associations as possible while still maintaining a low false positive rate, the False Discovery Rate (FDR) method is used [36]. We adjust the p-values using the *multproc* procedure in STATA, and consider only those traits significant at the (corrected) 5 per cent significance level or higher. In order to test the robustness of our preferred specification, we run a number of additional analyses as detailed in Appendix B.

3 Results

3.1 Main Results

Tables 1-6 present the results for each of our six indicators of preventive healthcare utilisation in turn. For each measure of preventive healthcare utilisation, we present first the estimates controlling just for age and sex (where appropriate), and next present the results adjusting for all control variables. Results are presented separately for those aged 50-64 years of age and those aged 65+. Full model results are presented in Tables C1-C6 in Appendix C.

Beginning with influenza vaccination, we find that higher neuroticism is associated with an increased risk of having ever had an influenza vaccination, for both age groups. Controlling for other correlates of influenza vaccination, extraversion is now statistically significant for those aged 50-64 years of age, although not when adjusting for multiple hypothesis testing. For those aged 65+ years, none of the personality traits are significant in the fully adjusted model.

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[insert Table 1 here]

In terms of cholesterol testing, for those aged 50-64 years of age, personality is never significant in explaining cholesterol testing. For those aged 65+ years, higher openness is associated with an increased probability of ever having had a cholesterol test, but this result loses statistical significance when other controls are added to the model and when adjustment is made for multiple hypothesis testing. In the fully adjusted model, neuroticism and extraversion are associated with an increased risk of cholesterol testing, but again these effects lose significance when the p-values are adjusted for multiple hypothesis testing.

[insert Table 2 here]

Looking at breast lump checks for women, for those aged 50-64 years of age, higher extraversion is associated with an increased risk of breast lump checks, but this effect loses significance after adjustment for multiple hypothesis testing. For women aged 65+, higher openness is a significant predictor of breast lump checks (Table 3). For women aged 50-64 years, for whom mammograms at this time were provided free of charge every two years under the national *Breast Check* screening programme, personality is never significant in predicting uptake. However, for women aged 65+, increased openness is associated with an increased risk of having ever undergone a mammogram, and this effect retains statistical significance after adjustment for multiple hypothesis testing (Table 4).

[insert Tables 3 and 4 here]

Moving on to men, Tables 5 and 6 shows that for men aged 50-64, personality is non-significant in explaining either prostate examination or PSA blood test uptake. For men aged 65+ years, there is some evidence that increased conscientiousness is associated with an increased risk of prostate examination, but this effect loses significance after adjustment for other covariates and multiple hypothesis testing.

[insert Tables 5 and 6 here]

4 Discussion

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We find that openness to experience is a significant predictor of breast lump check and mammogram in women aged 65+. [26-28] also found significant effects for openness, albeit with regard to different types of preventive healthcare utilisation (e.g., influenza vaccination). With the exception of the effects for breast lump checks and mammograms for women aged 65+ however, there is little consistent patterning across the different personality traits and/or types of preventive healthcare utilisation.

Increased neuroticism is a significant predictor of vaccination cholesterol test in those aged 65+ years of age, but not after adjustment for multiple hypothesis testing. Our findings for neuroticism are supportive of the hypothesis that increased neuroticism may be protective of health in that vigilance about germs, symptoms needing attention, medical developments and co-operation with treatment lead to an increased use of this type of preventive healthcare. There was no prior research to guide us on possible hypotheses for extraversion in relation to preventive healthcare utilisation, but the characteristics of this trait includes sociability, positive outlook, *etc*. While we find some evidence that extraversion is associated with an increased probability of influenza vaccination in those aged 50-64 and an increased probability of a cholesterol test in those aged 65+, these results do not survive adjustment for multiple hypothesis testing. Consistent with previous findings (e.g., [26]), we expected openness to experience, which reflects intellectual stimulation, change and variety, to be associated with use of preventive healthcare services, and we found it to be a significant predictor of both breast lump checks and mammograms in women aged 65+.

[26] found that being more agreeable was associated with a higher probability of having an influenza vaccination and a mammogram, and it has been noted that 'agreeable individuals may be less confrontational with doctors when it comes to decision-making and may not be bothered when doctors assume the traditional paternalistic role' [37; p264]. However, we find no significant effects for agreeableness for any of our measures of preventive healthcare utilisation. The lack of statistically significant results for conscientiousness may seem surprising given the relatively large body of evidence linking conscientiousness to improved health behaviours and outcomes [23]. However, [38] note that doctor adherence (i.e., adhering to doctor's order) partially mediated the relation between conscientiousness and perceived health across adulthood, particularly in adults aged 51 years and over, in their study of personality and adherence in the US.

Inevitably, there are a number of limitations to our analyses. First, our data and methodology does not allow us to examine causality. However, we have included a wide range of observable

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characteristics as controls which reduces (but does not eliminate) concerns over selection on observables. Ideally, an early-life measure of personality would be available although the consensus in the literature is that personality is reasonably stable after the age of 30. Second, potentially important variables (such as health literacy) are omitted as they are not available in the data [25]. Third, our measures of preventive healthcare utilisation are self-reported by the participant. However, it the validity of self-reported healthcare use has been demonstrated in a number of settings [24]. Finally, prevalence of reported preventive healthcare use in this population is high. While we used appropriate statistical methods, the lack of statistically significant findings for cholesterol testing and mammograms (for the 50-64 age group in particular) could partly reflect the near universal uptake of these services.

In terms of strengths, our paper benefits from the application of a comprehensive measure of personality, the NEO-FFI. To our knowledge, TILDA is the only longitudinal study of ageing to include the full 60-item instrument. TILDA also contains a comprehensive list of preventive healthcare utilisation indicators, allowing for an examination of multiple dimensions of preventive healthcare utilisation. Finally, the study population is representative of the older population in Ireland aged 50+, meaning that any policy implications are relevant for the over 50s in Ireland as a whole.

As illustrated in Table A2, while influenza vaccination is recommended for all those aged 65+ in Ireland, nearly 20 per cent of those aged 65+ in Ireland in 2012 had never had an influenza vaccination. On the other hand, in 2012, all women aged 50-64 years of age were entitled to a free mammogram every two years, and take-up is high among this group (96 per cent). In particular, the findings in relation to mammograms and breast lump checks for women aged 65+ suggest that personality traits may be additional factors explaining use of these services in populations that are not subject to national recommendations. Future work should consider how these insights may be integrated with the growing research in behavioural and psychological science on strategies to improve population health.

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comments. TILDA data are available from the Irish Social Science Data Archive (www.ucd.ie/issda/), Gateway to Globing Aging (www.g2aging.org/), and Interuniversity Consortium for Political and Social Research (www.icpsr.umich.edu/icpsrweb/).

CONFLICTS OF INTEREST: none

Tables

Table 1 Influenza Vaccination

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	**1.105**	1.045	**1.035**	1.020
	(0.025)* **	(0.025)*	**(0.013)*** **	(0.014)
Extraversion	1.007	1.061	0.995	0.999
	(0.023)	(0.026)**	(0.013)	(0.013)
Openness	0.983	0.980	0.999	0.994
	(0.021)	(0.022)	(0.012)	(0.013)
Agreeableness	1.011	1.008	1.004	1.014
	(0.023)	(0.023)	(0.012)	(0.012)
Conscientiousness	1.024	1.012	0.992	0.999
	(0.024)	(0.024)	(0.012)	(0.012)
N	3,419	3,095	2,272	2,056

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table 2 Cholesterol Test

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	1.006	1.007	1.006	1.009
	(0.005)	(0.005)	(0.004)	(0.004)**
Extraversion	1.002	1.003	1.005	1.009
	(0.005)	(0.005)	(0.004)	(0.004)**
Openness	1.000	0.995	1.008	1.003
	(0.004)	(0.005)	(0.004)**	(0.004)
Agreeableness	1.002	0.999	1.002	1.004
	(0.005)	(0.005)	(0.004)	(0.004)
Conscientiousness	1.001	1.003	1.003	1.001
	(0.005)	(0.005)	(0.004)	(0.004)
N	3,407	3,085	2,264	2,048

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table 3 Breast Lump Check

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	0.985	0.984	0.987	0.975
	(0.016)	(0.018)	(0.029)	(0.031)
Extraversion	1.048	1.055	1.046	1.049
	(0.018)***	(0.019)***	(0.031)	(0.033)
Openness	1.010	1.021	**1.082**	**1.123**
	(0.016)	(0.018)	**(0.028)*** **	**(0.034)*** **
Agreeableness	0.984	0.987	0.963	0.966
	(0.017)	(0.018)	(0.026)	(0.028)
Conscientiousness	1.009	1.007	1.032	1.024
	(0.018)	(0.019)	(0.030)	(0.031)
N	1,925	1,756	1,190	1,082

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table 4 Mammogram

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	1.002	1.004	1.023	1.023
	(0.005)	(0.005)	(0.020)	(0.021)
Extraversion	1.007	1.006	0.974	0.972
	(0.005)	(0.005)	(0.019)	(0.020)
Openness	1.000	0.996	**1.080**	**1.075**
	(0.005)	(0.005)	**(0.020)*** **	**(0.023)*** **
Agreeableness	1.007	1.006	1.028	1.030
	(0.005)	(0.005)	(0.020)	(0.022)
Conscientiousness	0.994	0.994	1.007	1.001
	(0.005)	(0.005)	(0.019)	(0.019)
N	1,921	1,752	1,188	1,080

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table 5 Prostate Examination

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	1.028	1.033	1.022	1.043
	(0.034)	(0.037)	(0.037)	(0.042)
Extraversion	1.044	1.049	1.029	1.050
	(0.033)	(0.036)	(0.034)	(0.037)
Openness	0.984	0.971	1.005	0.997
	(0.028)	(0.030)	(0.031)	(0.033)
Agreeableness	0.975	0.991	0.984	0.986
	(0.028)	(0.032)	(0.028)	(0.030)
Conscientiousness	1.053	1.037	1.070	1.069
	(0.034)	(0.035)	(0.035)**	(0.037)*
N	1,488	1,333	1,076	969

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table 6 PSA Test

	Age 50-64		Age 65+	
	(1)	(2)	(1)	(2)
Neuroticism	0.991	1.008	1.000	1.017
	(0.016)	(0.018)	(0.014)	(0.014)
Extraversion	1.025	1.029	1.004	1.011
	(0.015)	(0.016)*	(0.013)	(0.013)
Openness	1.007	1.002	1.005	0.997
	(0.014)	(0.015)	(0.012)	(0.012)
Agreeableness	0.993	0.992	0.998	1.001
	(0.014)	(0.015)	(0.010)	(0.011)
Conscientiousness	0.992	0.985	1.013	1.012
	(0.015)	(0.015)	(0.012)	(0.012)
N	1,449	1,297	1,046	945

Notes:

(1) Model with controls for age and sex only

(2) Model with controls for age, sex and additional covariates (see Table A2 for details)

Robust standard errors are presented in parentheses.

Bold typeface indicates personality associations that remain significant at the 5% level after applying the false discovery rate (FDR) correction.

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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RESEARCH HIGHLIGHTS

1. Preventive healthcare services are an important component of healthy ageing.
2. We examine the association between personality and preventive healthcare use.
3. Openness is associated with breast lump check and mammogram for those aged 65+.
4. Other 'Big Five' traits are not associated with preventive healthcare use.

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