Choi, S. L., & Martin, P., Cho, J., Ryou, Y., & Heinz, M. (2022). Personality and compliance with COVID-19 protective measures among older Americans: Moderating effects of age, gender, and race/ethnicity. *Personality and Individual Differences*. https://doi.org/10.1016/j.paid.2022.111499

Supplementary Material

Measurements

Covariates

Health variables have been investigated when researchers examined the association between chronic diseases and preventive health behaviors. Participants who had chronic diseases were more likely to comply with preventive behaviors. People reporting chronic diseases showed an additional 2% higher prevalence of washing or sanitizing hands (Islam et al., 2021). However, the opposite result was also found in Zareipour and colleagues' (2020) study. Participants who had at least one chronic disease reported less adoption of preventive behaviors than others. *Health* covariates included self-rated memory (range: 1 = poor; 5 = excellent), COVID-19 diagnosis, self-rated health (range: 1 = poor; 5 = excellent), comorbidity (high blood pressure, diabetes, cancer, lung disease, heart problems, stroke, psychiatric problems, and arthritis, range: 0 to 8), and depressive symptoms (range: 0 to 8). Depressive symptoms were assessed using a subset of items from the Center for Epidemiologic Studies Depression (CES-D) Scale (Radloff, 1977; $\alpha = .79$). COVID-19 diagnosis of respondent and respondent's close social ties were assessed with the four items: (a) "Have you had or do you now have COVID-19, the disease caused by the novel coronavirus?"; (b) "Has anyone in your household other than you been diagnosed with COVID-19?"; (c) "Has anyone else you know been diagnosed with COVID-19?"; and (d) "Has anyone you know died from COVID-19?" (1 = yes; 0 = no).

Sociodemographic variables included marital status [married or partnered; separated, divorced, widowed, or never married (reference)], years of educational attainment, and employment status [currently working; not working (reference)]. As family variables, we included the number of living children and siblings. Total household income and total household wealth were included as financial status variables. To reduce skewness, we used the natural logarithm for household income and household wealth.

Psychosocial variables included religious beliefs and social support. Given established linkages of religion with a range of cultural factors as well as health behaviors (Koffman et al., 2008; Li et al., 2016; Schlundt et al., 2008), we adjusted for religious beliefs, meaning, and values. Religious beliefs, meaning and values (Fetzer Institute, 2003) were assessed with the questions, "How much do you agree or disagree with each of the following statements: (a) I believe in a God who watches over me; (b) The events in my life unfold according to a divine or greater plan; (c) I try hard to carry my religious beliefs over into all my other dealings in life; and (d) I find strength and comfort in my religion." Responses were rated from 1 (*strongly disagree*) to 6 (*strongly agree*), and an average score was calculated from responses to four items ($\alpha = .93$). Higher scores corresponded to higher levels of religious beliefs, meaning, and values.

Evidence suggests psychosocial factors, particularly social support, also play a key role in facilitating preventive health behaviors (Haber et al., 2007; Han et al., 2019; Paykani et al.,

2020). Prior studies showed gender differences in the association between perceived social support from spouses and friends and preventive healthcare behaviors among older couples (e.g., Han et al., 2019). Interestingly, Paykani et al. (2020) indicated that perceived social support from family members was associated with less compliance with physical distancing, whereas perceived social support from friends was associated with greater compliance (Paykani et al., 2020). Respondents were also asked to rate both receiving and giving social support, particularly financial help and shopping for groceries, errands, rides, or chores. Receiving social support was assessed with the questions, "The coronavirus pandemic has affected many aspects of families' lives and many people have needed help even if they were not actually infected. Because of the coronavirus pandemic, did anyone living outside your household, such as a parent, adult child, other relatives, or friends, help you (and your spouse/partner) with (a) money or by paying bills; and (b) shopping for groceries, errands, rides, or chores?" (1 = yes; 0 = no). Next, respondents were asked to rate their giving social support with the questions, "Because of the coronavirus pandemic, have you (and your spouse/partner) helped anyone living outside your household, such as a parent, child, other relatives, or friends, with (a) money or paying their bills?; and (b) shopping for groceries, errands, rides, or chores?" (1 = ves; 0 = no).

Results on Health, Psychosocial, and Sociodemographic Characteristics Associated with COVID-19 Protective Measures

Individuals who had medical comorbidities were more likely to wear a mask. Knowing someone who had died from COVID-19 was significantly associated with taking precautionary protective health measures. Older adults who had received social support from close social ties due to the COVID-19 pandemic were significantly more likely to wash hands frequently. Older Americans who have given social support to close social ties because of the COVID-19 pandemic were significantly more likely to COVID-19 protective measures of practicing keeping distancing and using sanitizers. Older adults who had higher levels of religious beliefs, meaning, and values were significantly less likely to comply with COVID-19 protective measures of wearing a mask and physical distancing. However, we found no evidence that marital status, the number of living children and siblings, educational attainment, employment status, total household income, and wealth were associated with compliance with COVID-19 protective measures among older Americans (results are available upon request).

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Variables	Mean \pm SD (Median) or n (%)
Demographic and socioeconomic characteristics	
Age (in years)	65.97 ± 8.02 (65)
50-59 years old	207 (20.6)
60-69 years old	494 (49.1)
70-79 years old	264 (26.2)
80 years and older	41 (4.1)
Gender	· · · · · · · · · · · · · · · · · · ·
Men	440 (43.7)
Women	566 (56.3)
Race/ethnicity	· · · · · · · · · · · · · · · · · · ·
non-Hispanic White	667 (66.3)
non-Hispanic Black	177 (17.6)
Hispanic of any race	117 (11.6)
non-Hispanic Other race	45 (4.5)
Marital status	· · · · · · · · · · · · · · · · · · ·
Married or partnered	640 (63.6)
Separated or divorced	178 (17.7)
Widowed	118 (11.7)
Never married	70 (7.0)
Number of living children	2.65 ± 1.85 (2)
Number of living siblings	3.21 ± 2.60 (3)
Years of education	13.06 ± 3.22 (13)
Employment status	
Currently working	298 (29.6)
Not working	708 (70.4)
Total household income (\$)	$100,768.08 \pm 142,584.58$ (65,712)
Total household wealth (\$)	$561,484.81 \pm 1,161,679.37$ (176,500)
Psychosocial variables	
Religious beliefs, values, and meaning (1-6)	4.77 ± 1.58 (5)
Social support	
Received social support	
Yes	174 (17.3)
No	832 (82.7)
Gave social support	· · · · · · · · · · · · · · · · · · ·
Yes	444 (44.1)
No	562 (55.9)
Health characteristics	· · · · · · · · · · · · · · · · · · ·
COVID-19 diagnosis	
Respondent or household member had COVID-19	30 (3.0)
Anyone else respondent knows had COVID-19	373 (37.1)
Anyone respondent knows died from COVID-19	194 (19.3)
Memory (1-5)	3.09 ± 0.89 (3)
Self-rated health (1-5)	3.24 ± 0.98 (3)
	$5.21 \pm 0.90(3)$

Supplementary Table 1. Sample characteristics, HRS COVID-19 sample, 2020 (N = 1,006)

Depressive symptoms (0-8)	1.05 ± 1.70 (0)
Personality traits (1-4)	
Neuroticism	1.94 ± 0.61 (2)
Extraversion	3.18 ± 0.54 (3)
Openness	3.00 ± 0.54 (3)
Agreeableness	3.52 ± 0.49 (3)
Conscientiousness	3.31 ± 0.40 (3)
Compliance with COVID-19 protective measures (1-3)	
Worn a mask	2.82 ± 0.42 (3)
Frequent handwashing	2.85 ± 0.39 (3)
Kept distancing	2.83 ± 0.41 (3)
Used sanitizers	2.67 ± 0.55 (3)

	Worn a Mask					Frequent Handwashing					
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	
Main effects											
Personality traits											
Neuroticism	-0.044	-0.065†	-0.109	-0.124*	-0.062	-0.020	-0.026	-0.021	-0.094†	0.002	
Extraversion	-0.128**	-0.138***	-0.268**	-0.252***	-0.198***	0.041	0.005	-0.016	0.031	-0.038	
Openness	0.131***	0.145***	0.112	0.191**	0.176***	-0.006	0.030	-0.027	0.003	0.055	
Agreeableness	0.058	0.036	0.168†	0.045	0.057	0.130***	0.090*	0.220*	0.107†	0.155***	
Conscientiousness	0.010	0.022	0.056	-0.022	0.027	0.039	0.043	0.087	0.100†	0.080^{+}	
<u>Age</u>											
Age 50-59 (ref.)											
Age 60-69		0.029	0.029	0.030	0.028		0.093*	0.094*	0.091*	0.094*	
Age 70-79		0.082†	0.082†	0.083†	0.078^{+}		0.073	0.068	0.069	0.072	
Age 80+		0.063†	0.085*	0.059†	0.064†		0.049	0.063†	0.051	0.049	
<u>Gender</u>											
Men (ref.)											
Women		0.133***	0.131***	0.135***	0.132***		0.119***	0.119***	0.120***	0.120***	
<u>Race/ethnicity</u>											
Non-Hispanic White (ref.)											
Non-Hispanic Black (Black)		0.117***	0.121***		0.111**		0.093**	0.089*	0.093**	0.088*	
Hispanic		0.177***	0.180***		0.170***		0.108**	0.108**	0.113***	0.109**	
Non-Hispanic Other race (Other)		0.096**	0.093**	0.096**	0.108***		0.099**	0.096**	0.096**	0.096**	
Interaction effects											
<u>Personality traits × Age groups</u>											
Neuroticism × Age 60-69			-0.010					-0.009			
Neuroticism × Age 70-79			0.066					-0.018			
Neuroticism × Age 80+			0.036					0.039			
Extraversion × Age 60-69			0.143†					-0.023			
Extraversion × Age 70-79			0.071					0.101†			
Extraversion × Age 80+			-0.063					-0.046			
Openness × Age 60-69			0.004					0.080			
Openness × Age 70-79			0.017					-0.021			
Openness × Age 80+			0.043					0.045			
Agreeableness × Age 60-69			-0.077					-0.093			
Agreeableness × Age 70-79			-0.125*					-0.128*			
Agreeableness \times Age 80+			-0.037					-0.003			
Conscientiousness × Age 60-69			-0.059					-0.056			

Supplementary Table 2. OLS regression predicting wearing a mask and frequent handwashing during the COVID-19 pandemic, 2020 HRS (N = 1,006)

Conscientiousness × Age 70-79			-0.008					-0.007		
Conscientiousness × Age 80+			0.074					-0.033		
Personality traits × Gender										
Neuroticism × Women				0.082					0.089†	
Extraversion × Women				0.152*					-0.030	
Openness × Women				-0.067					0.042	
Agreeableness × Women				0.000					-0.037	
Conscientiousness × Women				0.052					-0.076	
Personality traits × Race/ethnicity										
Neuroticism × Black					-0.026					-0.051
Neuroticism × Hispanic					0.007					-0.012
Neuroticism × Other					0.019					-0.045
Extraversion × Black					0.093†					0.056
Extraversion × Hispanic					0.052					0.082†
Extraversion × Other					0.075					-0.008
Openness × Black					-0.059					-0.050
Openness × Hispanic					-0.005					0.016
Openness × Other					-0.028					0.030
Agreeableness × Black					-0.020					-0.025
Agreeableness × Hispanic					-0.028					-0.156***
Agreeableness × Other					-0.038					-0.069
Conscientiousness × Black					0.003					-0.067
Conscientiousness × Hispanic					-0.022					-0.008
Conscientiousness × Other					0.006					-0.027
<u>Social support</u>										
Received social support		-0.019	-0.018	-0.014	-0.020		0.072*	0.076*	0.072*	0.067*
Gave social support		0.034	0.024	0.033	0.035		0.045	0.043	0.046	0.045
Covariates	Unadjusted	Adjusted	Adjusted	Adjusted	Adjusted	Unadjusted	Adjusted	Adjusted	Adjusted	Adjusted
Adjusted <i>R</i> ²	.016	.063	.070	.068	.057	.027	.071	.072	.076	.078

Notes. Standardized coefficients (β) are presented; ref. = reference group; Models 2-5 are adjusted for health, sociodemographic, and psychosocial characteristics. † p < .10, * p < .05, ** p < .01, *** p < .001.

Variables		Ke	pt Distanc	ing	Used Sanitizers					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Main effects										
Personality traits										
Neuroticism	0.005	-0.046	-0.014	-0.067	-0.027	0.039	0.012	-0.021	-0.003	0.056
Extraversion	-0.030	-0.034	-0.013	0.000	-0.081	0.042	0.001	-0.037	0.018	-0.035
Openness	0.073†	0.077†	0.133	0.103†	0.115*	0.001	0.048	0.102	0.103†	0.067
Agreeableness	-0.009	-0.035	-0.013	-0.027	0.013	0.103**	0.055	0.098	0.063	0.103*
Conscientiousness	0.080*	0.108**	0.041	0.093†	0.134**	0.097**	0.097**	0.078	0.064	0.124**
Age										
Age 50-59 (ref.)										
Age 60-69		0.051	0.058	0.052	0.058		0.081^{+}	0.083†	0.082*	0.085*
Age 70-79		0.054	0.062	0.054	0.054		0.051	0.048	0.052	0.053
Age 80+		0.040	0.062†	0.042	0.041		0.024	0.041	0.026	0.030
Gender										
Men (ref.)										
Women		0.105**	0.108**	0.107**	0.101**		0.137***	0.135***	0.139***	0.138***
<u>Race/ethnicity</u>										
Non-Hispanic White (ref.)										
Non-Hispanic Black (Black)		0.080*	0.079*	0.082*	0.081*		0.113***	0.111**	0.116***	0.102**
Hispanic		0.132***	0.131***	0.135***	0.113**		0.143***	0.148***	0.145***	0.124***
Non-Hispanic Other race (Other)		0.093**	0.096**	0.092**	0.089**		0.041	0.038	0.039	0.030
Interaction effects										
Personality traits × Age groups										
Neuroticism × Age 60-69			-0.056					0.027		
Neuroticism × Age 70-79			0.027					0.006		
Neuroticism × Age 80+			-0.035					0.053		
Extraversion × Age 60-69			0.016					0.014		
Extraversion × Age 70-79			-0.031					0.062		
Extraversion × Age 80+			-0.090†					-0.029		
Openness × Age 60-69			-0.044					0.006		
Openness × Age 70-79			-0.068					-0.121*		
Openness × Age 80+			0.042					0.038		
Agreeableness × Age 60-69			-0.005					-0.055		
Agreeableness × Age 70-79			-0.033					-0.004		
Agreeableness × Age 80+			0.007					-0.051		
Conscientiousness × Age 60-69			0.052					0.017		

Supplementary Table 3. OLS regression predicting practicing keeping distancing and using sanitizers during the COVID-19 pandemic, 2020 HRS (N = 1,006)

Conscientiousness × Age 70-79			0.057					-0.004		
Conscientiousness × Age 80+			0.006					0.067		
<u>Personality traits × Gender</u>										
Neuroticism × Women				0.024					0.016	
Extraversion × Women				-0.043					-0.020	
Openness × Women				-0.031					-0.072	
Agreeableness × Women				-0.024					-0.023	
Conscientiousness × Women				0.025					0.051	
Personality traits × Race/ethnicity	<u>,</u>									
Neuroticism × Black					-0.026					-0.090*
Neuroticism × Hispanic					-0.007					0.000
Neuroticism × Other					-0.022					-0.045
Extraversion × Black					0.031					0.044
Extraversion × Hispanic					0.131**					0.093*
Extraversion × Other					-0.013					-0.005
Openness × Black					-0.055					-0.044
Openness × Hispanic					-0.023					-0.009
Openness × Other					-0.011					0.044
Agreeableness × Black					-0.047					-0.076
Agreeableness × Hispanic					-0.104*					-0.065
Agreeableness × Other					0.022					-0.057
Conscientiousness × Black					-0.012					0.017
Conscientiousness × Hispanic					-0.041					-0.050
Conscientiousness × Other					0.013					-0.066†
<u>Social support</u>										
Received social support		0.056†	0.060^{+}	0.057†	0.054		0.025	0.025	0.026	0.020
Gave social support		0.055†	0.049	0.058†	0.054†		0.069*	0.067*	0.072*	0.068*
Covariates	Unadjusted	Adjusted	Adjusted	Adjusted	Adjusted	Unadjusted	Adjusted	Adjusted	Adjusted	Adjusted
Adjusted R^2	.007	.058	.059	.057	.060	.030	.087	.088	.086	.093
Notes Standardized coefficients (f	3) are presente	$d \cdot ref = re$	ference orc	un Model	2-5 are adju	isted for healt	h socioder	nographic	and nsycho	social

Notes. Standardized coefficients (β) are presented; ref. = reference group; Models 2-5 are adjusted for health, sociodemographic, and psychosocial characteristics. $\dagger p < .10$, $\ast p < .05$, $\ast \ast p < .01$, $\ast \ast \ast p < .001$.