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Conscientiousness and health outcomes: The moderating role of general mental ability and the mediating role of internal health locus of control

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A R T I C L E I N F O

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A B S T R A C T

The study of health outcomes and its predictors remains a topic of great interest, and psychologists have long examined the connections between individual traits and health. This study focuses on the interaction between two core psychological traits—conscientiousness and general mental ability (GMA)—and their role in predicting health outcomes. This study tests a model in which conscientiousness and GMA interact to predict internal health locus of control (HLOC-I), which is subsequently associated with perceived health, body mass index, and blood pressure. The results suggest a moderated mediation process in which the relationship between conscientiousness and health outcomes is mediated by HLOC-I, and moderated by GMA such that the relationship between conscientiousness and health outcomes is lower for those higher in GMA. The results shed light on how personality and ability combine to predict health outcomes, and offers insight into the traits that potentially underlie HLOC-I, further highlighting the importance of stable, individual differences in determining salient health outcomes.

1. Introduction

Health outcomes are one of the most salient topics in the field of psychology. Scholars have examined numerous predictors of individual health and mortality, including individual-level psychological traits (Adler & Matthews, 1994). One trait that has been of interest over the years is internal health locus of control (HLOC-I), which has been defined broadly as "an amalgam of beliefs in personal control over illness management, illness prevention, mastery, and self-blame" (Steptoe & Wardle, 2001, p. 660). HLOC-I can be differentiated from external health locus of control in that high internals see themselves as having influence over their own health outcomes, and high externals see their health outcomes as being determined by others or even by chance (Cheng, Cheung, & Lo, 2016). Those higher in HLOC-I take more responsibility for their own health and engage in more behaviors that will have a positive impact on their health.

HLOC-I is a potentially important indicator of health, but its underpinnings are unclear. Indeed, over forty years ago Lau wrote, "Given the importance of health locus of control beliefs, the question arises, Where did these beliefs come from? What are their origins?" (1982, p. 322). These questions have yet to be fully answered. The purpose of this study is to examine two psychological traits—conscientiousness and general mental ability (GMA)—that potentially underlie HLOC-I. Conscientiousness is a robust predictor of physical and mental well-being (Anglim, Horwood, Smillie, Marrero, & Wood, 2020; Pletzer, Thielmann, & Zettler, 2024; Strickhouser, Zell, & Krizan, 2017). General mental ability (GMA) has also been linked to better physical (Hagenaars, Gale, Deary, & Harris, 2017) and mental health outcomes (Chmiel et al., 2012). However, previous research has reported mixed results regarding the relationship between conscientiousness and HLOC-I (cf. Auerbach & Pegg, 2002; Saklofske, Austin, Galloway, & Davidson, 2007) and between GMA and HLOC-I (cf. Beier & Ackerman, 2003; Raja, Williams, & McGee, 1994).

One possible explanation for these mixed findings is that the impact of conscientiousness and GMA on HLOC-I goes beyond direct effects and that the interaction between the two make a unique contribution to the development of HLOC-I. This explanation seems plausible given that beliefs surrounding health management are likely formed by a combination of practicing good habits (which are more likely maintained by those higher in conscientiousness) and appreciating the connections between health behaviors and outcomes (which are more likely understood by those higher in GMA). Interestingly, I was unable to locate a study testing the interactive effects of conscientiousness and GMA on HLOC-I, despite their being two of the most fundamental predictors of life outcomes. To bolster understanding of how conscientiousness and GMA contribute not only to HLOC-I but also to subsequent health

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outcomes, I draw on the theory of cognitive buffering to hypothesize that (a) conscientious interacts with GMA to predict HLOC-I such that the relationship between conscientiousness and HLOC-I will be weaker for those high in GMA and (b) HLOC-I is in turn associated with more positive health outcomes. Overall, I hypothesize a moderated mediation model as shown in Fig. 1.

1.1. *Conscientiousness and health locus of control*

Conscientiousness is a robust predictor of health outcomes (Bogg & Roberts, 2013; Hampson, Edmonds, Goldberg, Dubanoski, & Hillier, 2013) and increased longevity (Kern & Friedman, 2008). This may be in part due to its association with carefulness and deliberateness (McCrae & Costa, 1987), characteristics that may make conscientious individuals more likely to practice healthy behaviors. Meta-analytic results support this idea, showing that those high in conscientiousness are more likely to engage in physical activity, eat healthy foods, avoid drug, alcohol, and cigarette use (Bogg & Roberts, 2004), and observe medication schedules (Molloy, O'Carroll, & % Ferguson, E., 2014).

Conscientiousness shares a positive relationship with broad measures of locus of control (Hattrup, O'Connell, & Labrador, 2005), and researchers have gone so far as to propose that locus of control, broadly defined, might be a consequence of conscientiousness (Costa, McCrae, & Dye, 1991). Because HLOC-I involves "the extent to which individuals believe their health is a consequence of their own actions" (Norman, 1995, p. 213), it makes sense that the development of HLOC-I may rely on processes associated with conscientiousness. For example, conscientious individuals are more likely to be self-reliant, self-disciplined, and deliberate (McCrae & Costa, 1987), making them more likely to trust in their ability to improve and maintain their own health. The influence of conscientiousness on health behaviors and outcomes is thought to persist throughout life, with self-control—manifested as risk avoidance, healthy food choices, and exercise habits—being a mechanism through which conscientiousness realizes its effects (Shanahan, Hill, Roberts, Eccles, & Friedman, 2014). The health-related choices and habits that conscientious individuals are more likely to establish may be critical precursors to HLOC-I. Along this line of argument, Lau (1982, p. 323) suggested that "practice, or prior experience, in taking care of oneself" may lead to the development of HLOC-I. Since individuals higher in conscientiousness are more likely to practice healthy behaviors, they are more likely believe themselves capable of shaping their own health outcomes. Thus, those higher in conscientiousness should develop higher HLOC-I.

1.2. *The moderating role of GMA*

For several reasons, cognitive ability may also have an impact on HLOC-I. First, GMA is a main determinant of understanding information and learning (Gottfredson, 1997), which may be especially relevant to the development of HLOC-I. Those high in GMA are more likely to learn, retain, and understand information about improving and maintaining

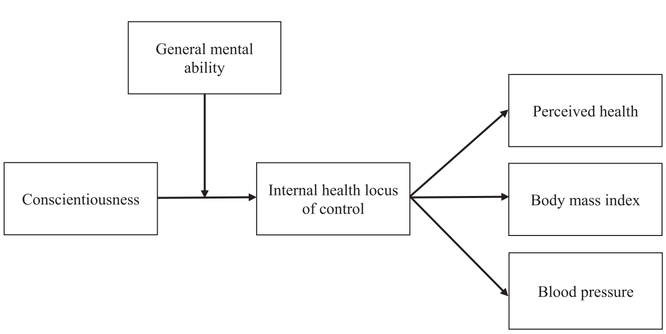

Fig. 1. Proposed study model.

their own health. Cognitive ability is a remarkably strong predictor of health knowledge, which shares a positive relationship with HLOC-I (Beier & Ackerman, 2003; see also Reeh & Reilly, 1995). Second, GMA may be associated with HLOC-I through its impact on individuals' ability to navigate complex health-related problems and policies, increasing their sense of personal control over their health. For example, GMA is a predictor of whether individuals have health benefits, with those lower in GMA less likely to enroll in benefit plans (Chan & Elbel, 2012). For those enrolled in healthcare plans, individuals higher in GMA may comprehend them more easily (Gottfredson, 1997), thereby increasing their sense of control over their own health outcomes. Finally, those higher in cognitive ability are also more likely to engage in regular exercise (Clarkson-Smith & Hartley, 1989), eat healthy foods (Junger & van Kampen, 2010) and adhere to medication regimens (Stilley, Sereika, Muldoon, Ryan, & Dunbar-Jacob, 2004), further increasing their sense of control over their health.

Because locus of control involves the belief that personal outcomes "are determined by personal effort, ability, and initiative" (Hattrup et al., 2005, p. 463), those higher in GMA should report higher HLOC-I. However, research examining the direct relationship between GMA and HLOC-I is sparse and somewhat equivocal (e.g., Beier & Ackerman, 2003; Raja et al., 1994); the direct relationship between GMA and HLOC-I seems to be a weak one. Of interest in the current study is not the direct relationship, but the potential interaction between GMA and conscientiousness as a predictor of HLOC-I.

Beyond its direct relationship with HLOC-I, previous researchers have theorized that GMA may act as a compensatory buffer that weakens the relationship between personality traits and outcomes. This process, called cognitive buffering (Bjorklund & Harnishfeger, 1995), can occur in two ways. The first is through the deliberate, conscious suppression of undesired urges, and the other is through the purposeful adoption of constructive courses of action. Cognitive buffering has been observed in experimental studies (Brewin & Beaton, 2002; Brewin & Smart, 2005) and clinical studies (McNally & Shin, 1995). Particularly relevant are the findings from field studies in applied psychology. Perkins and Corr (2006) showed that neuroticism was associated with lower assessment center performance—but only for those also low in GMA. Similarly, Postlethwaite, Robbins, Rickerson, and McKinnis (2009) reported that conscientiousness predicted workplace safety behaviors only for those lower in GMA. For those higher in GMA, conscientiousness did not predict safety behaviors, suggesting that GMA indeed buffered the relationship between conscientiousness and safety behaviors.

The buffering role of GMA is also pertinent to health behaviors and suggests that the relationship between conscientiousness and HLOC-I will be weaker for those higher in GMA. This is because those higher in GMA are more likely to suppress behavioral tendencies that lead to unhealthy choices and more likely to recognize, understand, and choose healthy behaviors—the combination of which may increase their sense of HLOC-I. Consider an individual that has a tendency to cope with stress by eating unhealthy snacks. If they are also higher in GMA, they are more likely to cognitively override this tendency and instead choose to avoid unhealthy snacks and instead use exercise as a coping mechanism. Consider also that individuals lower in conscientiousness are less likely to adhere to medication regimens (Molloy, O'Carroll, & Ferguson, 2014). In keeping with the results reviewed above, it may be the case that conscientiousness predicts adherence to medications regimens only for those lower in conscientiousness that are also lower in GMA. Consistent with previous results and the general theory of cognitive buffering, I expect that GMA will moderate the relationship between conscientiousness and HLOC-I.

Overall, the arguments above propose a conditional indirect effects model in which the moderation occurs at the first-stage of the model (Preacher, Rucker, & Hayes, 2007). Following previous theory and research, I predict that the relationship between conscientiousness and HLOC-I will be weaker for those high in GMA (Hypothesis 1). Further, I predict that HLOC-I will subsequently mediate the conditional effects of conscientiousness on perceived health (Hypothesis 2), body mass index (Hypothesis 3), and blood pressure (Hypothesis 4).

2. Method

2.1. Participants

Data for this study come from the National Survey of Midlife Development in the United States (MIDUS). The MIDUS study took place in three main phases—Phase 1 data was collected during 1995 and 1996; Phase 2 data was collected during 2004 to 2006, with the collection of GMA data extending to 2007; Phase 3 data was collected during 2013–2015. Because Phase 2 included the administration of a GMA assessment, the current study focuses on data from MIDUS Phase 2. The data used in the current study was collected from a combination of self-report questionnaires and phone interviews. The original study was broken into four samples: the main sample drawn from the general population, a sample of siblings of individuals included in the main sample, a sample of twins, and an oversample of individuals drawn from metropolitan areas. To ensure that the data used in the current study were from independent samples, I used only the main sample and the metropolitan oversample (Shaffer, 2020). After deleting subjects with missing data on the study and control variables, the final sample size was 1661. The average age of the respondents was 56.73 years ($SD = 12.45$); 52.4 % were female and 47.6 % were male.

2.2. Measures

2.2.1. Conscientiousness

I assessed conscientiousness using five single-word items developed for the MIDUS study (Lachman & Weaver, 1997). Each item asked respondents to indicate on a scale of 1 (*a lot*) to 4 (*not at all*) the extent to which each of the words *hardworking*, *organized*, *responsible*, *thorough*, and *careless* (reverse-scored) described them. I combined these five items into a single scale, rescoring items when necessary so that higher scores indicated higher conscientiousness (α = 69). This scale correlates highly with other measures of conscientiousness such as the NEO Short Form (Lachman, 2005) and the International Personality Item Pool (Huang, Shaffer, Li, & King, 2019).

2.2.2. GMA

The MIDUS study included a measure of GMA called the Brief Test of Adult Cognition by Telephone (BTACT). The BTACT consists of five cognitive subtests that assess episodic verbal memory, executive function, inductive reasoning, processing speed, and working memory span. Composite BTACT scores correlate highly with scores from a longer, more comprehensive GMA assessment, and its parallel form and test-retest reliability is also high. Detailed psychometric information for the BTACT is presented in Lachman, Agrigoroaei, Tun, and Weaver (2014). Each of the BTACT subtests were scored on a different scale, so prior to combining them into a GMA score I converted each subtest score to a z-score. I then averaged the z-scores from the five subtests to yield a single, composite GMA score (α = 0.71).

2.2.3. Health locus of control

To measure HLOC-I, I averaged four items (Zilioli, Slatcher, Ong, & Gruenewald, 2015). On a scale of 1 (*strongly agree*) to 7 (*strongly disagree*), respondents indicated the extent to which they agreed with each of the following four statements: "Keeping healthy depends on things that I can do", "There are certain things I can do for myself to reduce the risk of a heart attack", "There are certain things I can do for myself to reduce the risk of getting cancer", and "I work hard at trying to stay healthy". I reverse-scored all items so that higher scores indicated a higher health locus of control (α = 0.72).

2.2.4. Perceived health, BMI, and blood pressure

The MIDUS study includes a number of questions related to respondent health. I assessed respondent perceived health using three items that asked respondents to rate their own health (1 = *excellent*; 5 = *poor*), rate their health compared to others their age (1 = *much better*; 5 = *much worse*), and rate their overall health on a scale of 0 (*worst possible health*) to 10 (*best possible health*). I scored each item so that higher scores corresponded to higher levels of perceived health. Because the items were scored on different scales, I obtained z-scores for each item and then combined those scores into an overall perceived health score (α = 0.81). I calculated BMI using the self-reported height and weight for each respondent (in the MIDUS data, reported heights of greater than 84 in. were recorded as being 84 in.). I assessed blood pressure with a single item on which respondents were asked to recall the results of their last blood pressure reading on a scale that ranged from 1 to 4, where 1 = *low*, 2 = *about normal*, 3 = *slightly raised*, and 4 = *high*.

2.2.5. Control variables

I controlled for respondent age, gender, total household income, and education level. In the MIDUS study, education level was coded on a score that ranged from 1 (no school or a limited grade school education) to 12 (advanced professional degree such as a Ph.D, J.D., or M.D.).

2.3. Data analysis

I tested Hypothesis 1 using regression analysis in SPSS 28.0.1.1, standardizing the control variables and main variables and then calculating the interaction term as the product of the standardized independent and moderator variables (Dawson, 2014). I tested the full model of conditional indirect effects (Hypotheses 2, 3, and 4) using the PROCESS macro for SPSS (Hayes, 2018, Version 4.0, Model 7), generating effect size estimates and 95 % confidence intervals around those estimates using 5000 bootstrapped samples. Because there were three different dependent variables in this study, I tested three separate models in PROCESS and reported results for each model.

3. Results

Table 1 shows descriptive statistics for all study variables. Table 2 shows the results for the regression analysis. As shown in Table 2, the control variables were entered at Step 1, conscientiousness and GMA were entered at Step 2, and the interaction term between conscientiousness and GMA was entered in Step 3. The interaction term between conscientiousness and GMA was significant ($\beta = -0.06$, $p = .012$). I then graphed the interaction between conscientiousness and GMA as shown in Fig. 2. The pattern of the interaction indicates that the relationship between conscientiousness and HLOC was weaker for those high in GMA. Taken together, these results support Hypothesis 1.

Table 3 reports results for the full model of conditional indirect effects for each dependent variable, with effect size estimates shown at the 16th, 50th, and 84th percentile of the distribution for GMA. Hayes (2018, pp. 424-430) explains that the index of moderated mediation, as given in the output from the PROCESS macro, provides an inferential test of whether the indirect effects of the dependent variable (conscientiousness) are conditionally based on the level of the moderator (GMA). In a given conditional process analysis, if the confidence interval around the index of moderated mediation does not include zero, then the results support the conclusion that a conditional indirect effect exists. Following this guidance, I report the index of moderated mediated for each dependent variable. As shown in Table 3, the relationship between conscientiousness and perceived health was mediated by HLOC-I, and the indirect effect of conscientiousness on perceived health was weaker for those high in GMA (*indirect effect* = 0.087, CI = 0.049, 0.128) than for those low in GMA (*indirect effect* = 0.154, CI = 0.108, 0.203). The confidence intervals around the index of moderated mediation did not include zero (*index* = −0.048, CI = −0.092, −0.008). These results

Table 1
Descriptive statistics for all study variables.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	56.73	12.45										
2. Gender	1.52	0.50	−0.05									
3. Education level	7.44	2.56	−0.13**	−0.12**								
4. Household income	72,549.78	62,698.83	−0.28**	−0.11**	0.35**							
5. Conscientiousness	3.40	0.47	−0.02	0.09**	0.04	0.10**	(0.69)					
6. GMA	0.00	0.68	−0.43**	0.01	0.39**	0.31**	0.09**	(0.71)				
7. Health locus of control	6.05	0.85	0.02	0.11**	0.07**	0.03	0.23**	0.05*	(0.72)			
8. Perceived health	0.00	0.85	−0.02	−0.04	0.22**	0.16**	0.25**	0.19**	0.35**	(0.81)		
9. Body mass index	28.10	5.84	−0.03	−0.06*	−0.11**	−0.05*	−0.11**	−0.06*	−0.17**	−0.31**		
10. Blood pressure	2.05	0.61	0.07*	−0.08**	−0.04	−0.05*	−0.06*	−0.08**	−0.09**	−0.14**	0.20**	

Note: $n = 1661$, *$p < .05$, **$p < .01$; for gender, 1 = male and 2 = female.

Table 2
Regression results for moderation analysis.

Variable	Step 1		Step 2		Step 3	
	Coefficient	*p*	Coefficient	*p*	Coefficient	*p*
DV = Health locus of control						
Age	0.05	0.064	0.05*	0.044	0.06*	0.032
Gender	0.13**	0.000	0.10**	0.000	0.11**	0.000
Education level	0.08**	0.002	0.07*	0.016	0.06*	0.017
Household income	0.03	0.331	0.00	0.965	0.00	0.854
Conscientiousness			0.22**	0.000	0.21**	0.000
GMA			0.03	0.342	0.03	0.371
Conscientiousness × GMA					−0.06*	0.012
Coefficients of determination						
R2	0.022		0.069		0.073	
ΔR2			0.048**	0.000	0.004*	0.012

Note: n = 1661, *$p < .05$, **$p < .01$.

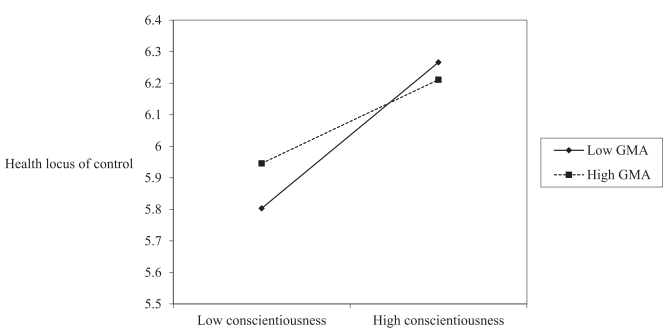

Fig. 2. Interaction between conscientiousness and GMA.

support the hypothesized conditional indirect effects model with perceived health as the dependent variable. Similarly, the relationship between conscientiousness and BMI was mediated by HLOC-I, with the indirect effect being weaker for those high in GMA (*indirect effect* = −0.281, CI = −0.460, −0.134) than for those low in GMA (*indirect effect* = −0.498, CI = −0.750, −0.298). The confidence intervals around the index of moderated mediation did not include zero (*index* = 0.156, CI = 0.027, 0.328), which offers further support for the hypothesized model. Finally, the relationship between conscientiousness and blood pressure was also mediated by HLOC-I, and the indirect effect of conscientiousness on blood pressure was weaker for those high in GMA (*indirect effect* = −0.015, CI = −0.029, −0.004) than for those low in GMA (*indirect effect* = −0.027, CI = −0.049, −0.009). Again, the confidence intervals around the index of moderated mediation did not include zero (*index* = 0.008, CI = 0.001, 0.019). Overall, these results support the Hypotheses 2, 3, and 4 and show that conscientiousness, via the mediating effects of HLOC-I and moderated by GMA, has a conditional indirect effect on perceived health, BMI, and blood pressure.

Table 3
Conditional indirect effects of conscientiousness on health outcomes.

	Indirect effect	Bootstrap SE	Bootstrap LLCI	Bootstrap ULCI
DV = Perceived health				
GMA 16th percentile	0.154	0.024	0.108	0.203
GMA 50th percentile	0.121	0.017	0.090	0.154
GMA 84th percentile	0.087	0.020	0.049	0.128
DV = Body mass index				
GMA 16th percentile	−0.498	0.117	−0.750	−0.298
GMA 50th percentile	−0.389	0.086	−0.572	−0.237
GMA 84th percentile	−0.281	0.082	−0.460	−0.134
DV = Blood pressure				
GMA 16th percentile	−0.027	0.010	−0.049	−0.009
GMA 50th percentile	−0.021	0.008	−0.037	−0.007
GMA 84th percentile	−0.015	0.006	−0.029	−0.004

Note: n = 1661, LLCI = lower limit of 95 % confidence interval; ULCI = upper limit of 95 % confidence interval.

4. Discussion

The results of this study show how conscientiousness, GMA, and HLOC-I jointly predict health outcomes, combining all three into a single model and building on previous work by explaining not only how conscientiousness realizes its effects on health outcomes but also under what conditions those effects are stronger or weaker. Conscientiousness and GMA interacted to predict HLOC-I, which subsequently carried the conditional, or moderated, effects of conscientiousness to health outcomes. The direct relationship between GMA and HLOC-I was a weak one in the current study. These results lends credence to Lau's (1982) assertion that practicing healthy habits may help develop HLOC-I, and raises the possibility that HLOC-I is more directly associated with conscientiousness because conscientiousness reflects a willingness to engage in behaviors and habits that will have a positive impact on health outcomes.

The results also add to our understanding of how the cognitive buffering process can influence individual outcomes. Previous research has shown that cognitive ability plays a buffering role in determining mental health outcomes (e.g., Bridger & Daly, 2019; McNally & Shin, 1995), but few studies examine the buffering role of GMA in physical health outcomes. The current results suggest that GMA can indirectly counterbalance low levels of conscientiousness when determining physical health outcomes such as BMI and blood pressure. Specifically, conscientiousness shared a positive relationship with HLOC-I that was weaker for those high in GMA and subsequently predicted health outcomes. These findings help expand the scope of cognitive buffering research and are an important addition to our understanding of how personality and GMA interact to predict health outcomes.

This study has several strengths—the data come from a large national sample and the trait measures used in the study are psychometrically robust. However, there are some limitations. Most importantly, the measures of health used as outcome variables are imperfect. For example, the calculations of BMI used in this study derived from self-report data, and neither men nor women are completely accurate when reporting their height and weight. Self-report errors related to height and weight tend to be relatively small (Stommel & Schoenborn, 2009); these errors may have an impact on BMI classification (i.e., whether individuals are classified as underweight, overweight, etc.), but broad classifications were not used in this study. Even when measured with perfect accuracy, BMI is an imperfect indicator of health status. BMI is useful for health screening purposes but not for diagnostic ones. Clinical examination is required to interpret BMI (Sweatt, Garvey, & Martins, 2024). Thus, inferences from the BMI results in this paper should be made cautiously. The measure of blood pressure used in this study was based on broad categories. Clinical measures of blood pressure were not available for all subjects, but previous research has shown that self-reported blood pressure aligns closely with objective blood pressure readings (Cheng, Studdiford, Chambers, Diamond, & Paynter, 2002), which may increase confidence in the results of this study.

There are several promising avenues for future research. The model I tested examined the broad constructs of conscientiousness and GMA while arguing that these traits help predict better health habits and health knowledge. Future research might test this more precisely by examining how specific sets of healthy habits or knowledge (e.g., habits or knowledge of nutrition, exercise, and sleep) may interact to predict HLOC-I and downstream health outcomes. In addition, because the health outcome measures used in this study are inexact (i.e., perceived health was derived from subjective questionnaire data, BMI is not a clinical diagnostic measure), future research should replicate this study using clinical indicators of physical health status such as objectively measured blood pressure, resting heart rate, adiposity, or cholesterol and blood sugar levels.

5. Conclusion

The current study adds to research showing that the interaction between conscientiousness and GMA uniquely predicts life outcomes. By showing that conscientiousness and GMA interact to predict HLOC-I, which subsequently is associated with perceived health, BMI, and blood pressure, this study adds to our understanding of how conscientiousness and GMA realize their effects on distal individual outcomes. Overall, the results lend further support to the cognitive buffering hypothesis and highlight the importance of examining the joint roles of conscientiousness and GMA in determining critical indicators of individual health.

CRediT authorship contribution statement

Jonathan A. Shaffer: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

None.

Data availability

The data I used is available to the public.

References

Adler, N., & Matthews, K. (1994). Health psychology: Why do some people get sick and some stay well? *Annual Review of Psychology, 45*, 229–259.

Anglim, J. A., Horwood, S., Smillie, L. D., Marrero, R. J., & Wood, J. K. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin, 146*, 279–323.

Auerbach, S. M., & Pegg, P. O. (2002). Appraisal of desire for control over healthcare: Structure, stability, and relation to health locus of control and to the 'big five' personality traits. *Journal of Health Psychology, 7*, 393–408.

Beier, M. E., & Ackerman, P. L. (2003). Determinants of health knowledge: An investigation of age, gender, abilities, personality, and interests. *Journal of Personality and Social Psychology, 84*, 439–448.

Bjorklund, D. F., & Harnishfeger, K. K. (1995). The evolution of inhibition mechanisms and their role in human cognition and behavior. In F. N. Dempster, & C. J. Brainerd (Eds.), *Interference and inhibition in cognition* (pp. 141–173). San Diego: Academic Press.

Bogg, T., & Roberts, B. W. (2004). Conscientiousness and health-related behaviors: A meta-analysis of the leading behavioral contributors to mortality. *Psychological Bulletin, 130*, 887–919.

Bogg, T., & Roberts, B. W. (2013). The case for conscientiousness: Evidence and implications for a personality trait marker of health and longevity. *Annals of Behavioral Medicine, 45*, 278–288.

Brewin, C. R., & Beaton, A. (2002). Thought suppression, intelligence, and working memory capacity. *Behavior Research and Therapy, 40*, 923–930.

Brewin, C. R., & Smart, L. (2005). Working memory capacity and suppression of intrusive thoughts. *Journal of Behavior Therapy and Experimental Psychiatry, 36*, 61–68.

Bridger, E., & Daly, M. (2019). *Cognitive ability as a moderator of the association between social disadvantage and psychological distress: Evidence from a population-based sample. 49* pp. 1545–1554). Psychological Medicine.

Chan, S., & Elbel, B. (2012). Low cognitive ability and poor skill with numbers may prevent many from enrolling in Medicare supplemental coverage. *Health Affairs, 31*, 1847–1854.

Cheng, C., Cheung, M. W. L., & Lo, B. C. Y. (2016). Relationship of health locus of control with specific health behaviours and global health appraisal: A meta-analysis and effects of moderators. *Health Psychology Review, 10*, 460–477.

Cheng, C., Studdiford, J. S., Chambers, C. V., Diamond, J. J., & Paynter, N. (2002). The reliability of self-reported blood pressures. *The Journal of Clinical Hypertension, 4*, 259–273.

Chmiel, M., Bruner, M., Keller, U., Schalke, D., Wrulich, M., & Martin, R. (2012). Does childhood general cognitive ability at age 12 predict subjective well-being at age 52? *Journal of Research in Personality, 46*, 627–631.

Clarkson-Smith, L., & Hartley, A. A. (1989). Relationships between physical exercise and cognitive abilities in older adults. *Psychology and Aging, 4*, 183–189.

Costa, P. T., McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of the NEO personality inventory. *Personality and Individual Differences, 12*, 887–898.

Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business Psychology, 29*, 1–19.

Gottfredson, L. S. (1997). Why *g* matters: The complexity of everyday life. *Intelligence, 24*, 79–132.

Hagenaars, S. P., Gale, C. R., Deary, I. J., & Harris, S. E. (2017). Cognitive ability and physical health: A Mendelian randomization study. *Scientific Reports, 7*, 2651.

Hampson, S. E., Edmonds, G. W., Goldberg, L. R., Dubanoski, J. P., & Hillier, T. A. (2013). Childhood conscientiousness relates to objectively measured adult physical health four decades later. *Health Psychology, 32*, 925–928.

Hattrup, K., O'Connell, M. S., & Labrador, J. R. (2005). Incremental validity of locus of control after controlling for cognitive ability and conscientiousness. *Journal of Business and Psychology, 19*, 461–481.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guilford Press.

Huang, J. L., Shaffer, J. A., Li, A., & King, R. A. (2019). General mental ability, conscientiousness, and the work-family interface: A test of mediating pathways. *Personnel Psychology, 72*, 291–321.

Junger, M., & van Kampen, M. (2010). Cognitive ability and self-control in relation to dietary habits, physical activity and bodyweight in adolescents. *International Journal of Behavioral Nutrition and Physical Activity, 7*, 22.

Kern, M. L., & Friedman, H. S. (2008). Do conscientious individuals live longer? A quantitative review. *Health Psychology, 27*, 505–512.

Lachman, M. E. (2005). Addendum for MIDI personality scales: MIDUS II version. Retrieved on December 12, 2019 from. https://www.brandeis.edu/psychology/lachman/pdfs/revised-midi-scales.pdf.

Lachman, M. E., Agrigoroaei, S., Tun, P. A., & Weaver, S. L. (2014). Monitoring cognitive functioning: Psychometric properties of the brief test of adult cognition by telephone. *Assessment, 21*, 404–417.

Lachman, M. E., & Weaver, S. L. (1997). *The midlife development inventory (MIDI) personality scales: Scale construction and scoring*. Waltham, MA: Brandeis University.

Lau, R. R. (1982). Origins of health locus of control beliefs. *Journal of Personality and Social Psychology, 42*, 322–334.

McCrae, R. R., & Costa, P. T. (1987). Validation of the Five-Factor Model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.

McNally, R. J., & Shin, L. M. (1995). Association of intelligence with severity of posttraumatic stress disorder symptoms in Vietnam combat veterans. *American Journal of Psychiatry, 152*, 936–938.

Molloy, G. J., O'Carroll, R. E., & % Ferguson, E.. (2014). Conscientiousness and medication adherence: A meta-analysis. *Annals of Behavioral Medicine, 47*, 92–101.

Norman, P. (1995). Health locus of control and health behaviour: An investigation into the role of health value and behaviour-specific efficacy beliefs. *Personality and Individual Differences, 18*, 213–218.

Perkins, A. M., & Corr, P. J. (2006). Cognitive ability as a buffer to neuroticism: Churchill's secret weapon? *Personality and Individual Differences, 40*, 39–51.

Pletzer, J. L., Thielmann, I., & Zettler, I. (2024). Who is healthier? A meta-analysis of relations between the HEXACO personality domains and health outcomes. *European Journal of Personality, 38*, 342–364.

Postlethwaite, B. E., Robbins, S., Rickerson, J., & McKinnis, T. (2009). The moderation of conscientiousness by cognitive ability when predicting workplace safety behavior. *Personality and Individual Differences, 47*, 711–716.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*, 185–227.

Raja, S. N., Williams, S., & McGee, R. (1994). Multidimensional health locus of control beliefs and psychological health for a sample of mothers. *Social Science & Medicine, 39*, 213–220.

Reeh, E. H., & Reilly, K. J. (1995). *A quasi meta analysis of the health locus of control construct (Report No. ED 380 732). University of Calgary. Retrieved from the ERIC database*.

Saklofske, D. H., Austin, E. J., Galloway, J., & Davidson, K. (2007). Individual difference correlates of health-related behaviours: Preliminary evidence for links between emotional intelligence and coping. *Personality and Individual Differences, 42*, 491–502.

Shaffer, J. A. (2020). Forethought and intelligence: How conscientiousness, future planning, and general mental ability predict net worth. *Personality and Individual Differences, 159*, Article 109853.

Shanahan, M. J., Hill, P. J., Roberts, B. W., Eccles, J., & Friedman, H. S. (2014). Conscientiousness, health, and aging: The life course of personality model. *Developmental Psychology, 50*, 1470–1475.

Steptoe, A., & Wardle, J. (2001). Locus of control and health behavior revisited: A multivariate analysis of yound adults from 18 countries. *British Journal of Psychology, 92*, 659–672.

Stilley, C. S., Sereika, S., Muldoon, M. F., Ryan, C. M., & Dunbar-Jacob, J. (2004). Psychological and cognitive function: Predictors of adherence with cholesterol lowering treatment. *Annals of Behavioral Medication, 27*, 117–124.

Stommel, M., & Schoenborn, C. A. (2009). Accuracy and usefulness of BMI measures based on self-reported weight and height: Findings from the NHANES & NHIS 2001-2006. *BMC Public Health, 9*, 421.

Strickhouser, J. E., Zell, E., & Krizan, Z. (2017). Does personality predict health and well-being? A metasynthesis. *Psychological Health, 36*, 797–810.

Sweatt, K., Garvey, W. T., & Martins, C. (2024). *Strengths and limitations of BMI in the diagnosis of obesity: What is the path forward?* (Current Obesity Reports).

Zilioli, S., Slatcher, R. B., Ong, A. D., & Gruenewald, T. L. (2015). Purpose in life predicts allostatic load ten years later. *Journal of Psychosomatic Research, 79*, 451–457.