

# Assessing Conscientious Personality in Primary Care: An Opportunity for Prevention and Health Promotion

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The articles in this special section bolster the already strong evidence base that personality differences in the trait of conscientiousness predict health. What is now needed is a research agenda for translating documented risk associations between low conscientiousness and poor health into policies and interventions that improve health outcomes for individuals and populations. In this commentary, we highlight 1 such avenue: introducing brief personality assessment into primary care practice. We provide examples of how conscientiousness assessment may help health care professionals get to know their patients better and potentially serve as a guide for more personalized care. We also raise key considerations for implementation research aimed at examining the feasibility and utility of integrating conscientiousness assessment into primary care settings.

**Keywords:** personality, physical health, personalized medicine, conscientiousness, primary care

The articles in this special section provide strong evidence that individual differences in conscientiousness predict health. Research on conscientiousness and health has progressed from identifying simple associations to detailing nomological networks, describing life-course development, and honing in on causal mechanisms. Still left to establish is how this knowledge can be used to improve health outcomes for individuals and populations. Research is needed to translate identified risk factors into interventions and policies that improve health (Chapman, Hampson, & Clarkin, 2014). Key questions include, How can we structure environments to best enhance the health of individuals low in conscientiousness? and When during the life course can we realize the greatest return on conscientiousness-based interventions? Previously, we have examined some of these questions in the Dunedin Multidisciplinary Health and Development Study, a 40-year investigation of health and behavior in 1,037 individuals followed from birth to midlife. We reported that childhood self-control, a precursor to adult conscientiousness, predicts a panoply of midlife out-

comes in education, health, wealth, crime, parenting, and even adults' life satisfaction (Moffitt et al., 2011; Moffitt, Poulton, & Caspi, 2013). The connection between self-control and all of these outcomes followed a gradient; at every step upward on the scale of childhood self-control, Dunedin cohort members' adult outcomes looked better. The implication was that even children with already above-average self-control could benefit from improving their self-control skills. Most discussion of intervention to enhance self-control focuses on schools, which provide efficient access to the child population. In this comment, we suggest ideas for translating personality research in an efficient place to reach the adult population: primary care medicine. Introducing conscientiousness to primary care might enhance the health of adults.

The leading causes of premature mortality in the United States and the world are chronic diseases (e.g., heart disease, stroke, diabetes) that persist over time and progress gradually over the life course. The risks for these diseases are influenced by modifiable behaviors such as smoking, excessive alcohol consumption, poor diet, and physical inactivity. Personality research has shown that individuals that differ in their conscientiousness also differ in their likelihood of engaging in these health risk behaviors (Bogg & Roberts, 2004). Assessing conscientiousness before the average age of disease onset could provide an early indication of future health risk across a broad spectrum of comorbid health conditions accounted for by poor health behaviors. Assessing conscientiousness in young adults, whose lifelong health-behavior habits are still being formed, could help prompt clinicians to get their patients on the track toward good health. Changes to American health care brought on by the American Affordable Care Act are leading to a steep rise in the number of newly insured young adult Americans with health insurance coverage (Collins, Nicholson, & Fund, 2010; Sommers, Buchmueller, Decker, Carey, & Kronick, 2013). This presents an unprecedented opportunity.

Would knowing a young adult patient's level of conscientiousness really help predict his or her future health? Our interest in this

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question motivated us to test the translational potential of personality assessment in the Dunedin Study. We found that brief measures of young adults' personalities taken at the age of 26 years predicted their physical health at the age of 38 years across multiple biomarkers (metabolic abnormalities, cardiorespiratory fitness, pulmonary function, periodontal disease, and systemic inflammation; Israel et al., *in press*). These biomarkers are informative, because they constitute signposts on the route to age-related diseases. Individuals in the study who scored lowest on a five-item measure of conscientiousness showed the greatest decline in health over a 12-year period from young adulthood to midlife. We also asked, Would assessing conscientiousness add incremental information over what doctors already assess in primary care settings? We gathered information that mimicked the patient histories that doctors routinely inventory during clinic visits: education level, socioeconomic status, smoking, obesity, self-reported health, medical conditions, and family medical history. We found that low conscientiousness predicted decline in physical health from ages 26 to 38 years, even after accounting for preexisting differences in study members' initial levels of these factors typically ascertained in the doctor's office. These findings support the growing evidence base that low conscientiousness could itself signal a patient's need for health-enhancing prevention. That a brief five-item measure of conscientiousness was sufficient to add incremental prediction over and above young adult patients' medical histories suggests that conscientiousness could be assessed despite the already packed schedule of the routine primary care visit.

As more young adult Americans take advantage of their new health insurance benefit, health care professionals will be facing more young adult patients whose health needs are unfamiliar to them. Personality assessment may be a quick and structured way to help acquaint doctors with their patients' thoughts, feelings, and behaviors. Could brief personality assessments pay their way as an addition to current self-completed screening questions already administered in the waiting room before seeing a doctor? Chapman et al. (2014) raised intriguing possibilities for how personality assessment could be used to differentiate treatment and intervention programs on the basis of personality profiles. Existing medical practices routinely screen for future health risk on the basis of factors such as smoking status, family history of heart disease, body mass index, and high blood pressure. If risk levels exceed a certain cutpoint, this signal prompts the physician to talk to the patient about preventing obesity or hypertension, to make a nutritionist referral, or to advise the patient to make use of a home blood pressure monitoring device. Some individuals get advice from their doctors, internalize it, and change their behavior. Others get the same advice but are less successful in adhering to it. Measures that can identify which individuals need additional support to adhere to their doctor's advice are needed. A low conscientiousness score in a patient's chart could guide physicians to prescribe plans that account for a patient's low self-control. For example, individuals low in conscientiousness may benefit from "smart-bottle" technology, which reminds patients when to take their medication and notifies them via text or e-mail when a prescription should be refilled. Young women low in conscientiousness may benefit from long-acting reversible contraceptives, which only need to be administered once every 12 weeks, rather than oral contraceptives, which require daily compliance and tend

to have higher adherence-related failure rates (Winner et al., 2012). A low conscientiousness score could also signal the need for more engagement from the health care provider in facilitating healthy lifestyle decisions. This could include motivational strategies to promote lifestyle changes, such as setting proximal goals, enhancing self-efficacy, and establishing peer support networks (Artinian et al., 2010). Personality assessment could even prompt additional engagement in scheduling follow-up appointments. For example, e-mail reminders and text messages could be tailored to individuals low in conscientiousness, who are likely to miss appointments. Some research suggests that such personality-targeted interventions may be more effective than general prevention-oriented education in mitigating problem behaviors in high-risk young people (Conrod et al., 2013).

More broadly, personality measures can help physicians get to know their patients better, an objective that parallels the Institute of Medicine's call for greater patient centeredness in medical decision making (Smith, Saunders, Stuckhardt, & McGinnis, 2013). The electronic infrastructure to support the patient-centered initiative is increasingly incorporating self-report questionnaires that make available patients' subjective thoughts, feelings, and experiences to inform treatment plans via systems such as the National Institute of Health-funded Patient-Reported Outcome Measurement Information System (better known as PROMIS; Cella et al., 2010). To date, these programs are not informed by personality psychology. However, core issues in the patient-centered approach to prevention are based on concepts long familiar to personality psychologists. Prevention often requires individuals to realize tradeoffs between short-term temptations (fatty foods, cigarettes) and long-term costs (obesity, pulmonary disease) or between immediate costs (exercise, filling a prescription, flossing) and later, sometimes uncertain benefits. Facets of conscientiousness such as self-control, organization, and planfulness reflect enduring differences in a person's capacity to optimize these tradeoffs to enjoy better health. We emphasize health promotion for low-conscientiousness patients rather than changing the core trait of conscientiousness itself, in part because we are interested in translation to the primary care setting. (Primary care medicine does not seem well equipped to attempt personality change.) Moreover, we suggest that interventions might address specific skills rather than broad traits. For instance, the track record is weak for efforts to enhance the trait of intelligence, but this does not stop schools from teaching skills that use intelligence, such as reading and math. Likewise, it might not be necessary to alter the core personality trait of conscientiousness to teach people skills necessary to look after their health.

### A Research Agenda for Implementation and Translation

Hospitals and care providers are beginning to link comprehensive records of health service use, lab tests, diagnoses, and drug prescriptions into centralized electronic systems that will capture the complexity of interaction with the health care system for enormous numbers of individuals. Adding personality measures to these electronic infrastructures could provide an invaluable data resource for researchers to examine how personality and health interact over time, in the real world. But before adding brief personality assessment to electronic health care systems, imple-

mentation research is needed to examine the feasibility and clinical utility of integrating systematic conscientiousness assessment into primary care settings. First, instrument development is needed to address which of the long and short conscientiousness questionnaires best stand up to the rigors of clinical translation. Which instruments reliably discriminate patients' conscientiousness as distinct from other related factors such as their socioeconomic status and education? Should items with health-relevant content be added to conscientiousness scales? What are the sensitivity and specificity of different conscientiousness instruments for predicting a list of health-related outcomes (e.g., nonadherence to diet and exercise recommendations in obesity, metabolic and cardiovascular disease, smoking cessation failure)? Second, implementation research should assess the acceptability of conscientiousness questionnaires to patients and medical staff. Patients often willingly reveal sensitive information about drug use and sexual behavior in the service of improving their health care; how can talking about conscientiousness be made similarly acceptable to patients and doctors? Implementation research must address the moral question, Will patients who reveal low conscientiousness be stigmatized, judged, or rejected by health care staff? Doctors we have talked with tell us that they already form opinions about each patient's conscientiousness, and these opinions already affect medical decision making but in a nonsystematic, unstandardized, and error-prone way. For example, in health organizations that reward doctors on the basis of patient outcome, patients who appear unconscientious are often disliked and dismissed. A system that awarded extra points for a good outcome in a low-conscientiousness patient might be corrective. As another example, patients are denied organ transplants if medical staff suspect they are insufficiently conscientious to adhere to the rigorous posttransplant aftercare regimen. This practice is being challenged in the courts. Patient and doctors alike might welcome a conscientiousness assessment that is more transparent and fairly applied.

If conscientiousness assessment is found to be acceptable, then implementation research should develop strategies to help health care professionals engage patients and communicate the health risks of low conscientiousness in a way that is supportive and nonconfrontational. One such strategy is motivational interviewing, which is intended to increase a patient's awareness of their behavior and the potential problems it causes. Motivational interviewing was initially developed for problem drinkers but has since been recommended by the U.S. Preventive Services Task Force for smokers, by the American Heart Association for patients with poor diet and sedentary lifestyle, and by the American Academy of Pediatrics for adolescents with problem behaviors. Finally, randomized controlled trials should be conducted in which health care providers either have access to personality information or do not. Does personality information produce improved patient outcomes? Are health care costs reduced by identifying highly conscientious patients who can use information on their own at home, requiring shorter inpatient stays for supervision? Primary care health professionals, armed with knowledge about the conscientiousness of

each patient, have the opportunity to bring about a population shift in lifelong health.

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