



## Personality traits and subjective health in the later years: The association between NEO-PI-R and SF-36 in advanced age is influenced by health status

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### ABSTRACT

This study examined the association between personality traits (as measured by the NEO-PI-R) and subjective ratings of mental and physical health (as measured by the SF-36) in two samples of older adults differing in health status (Baltimore Longitudinal Study of Aging, BLSA,  $n = 393$ , vs. Medicare Primary and Consumer-Directed Care Demonstration, Medicare PCC,  $n = 648$ ). The association between personality traits and subjective mental health did not differ significantly across samples. The association between personality and subjective physical health, however, was significantly stronger in the healthy BLSA sample than in the medically challenged Medicare PCC sample. Differences in health conditions and recent hospitalizations partially accounted for this effect. Lifespan developmental considerations and implications for the use of subjective health ratings as outcome measures in clinical studies are discussed.

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### 1. Introduction

Researchers have long recognized the usefulness of subjective rating scales to assess mental and physical health. Such measures are straightforward, quick to administer, and can be collected in mail surveys, phone interviews, and informal settings where objective health assessments or interview measures are not feasible (e.g., Maddox & Douglas, 1973). And indeed, subjective health ratings predict many important objective health outcomes, such as medication use (Hershman, Simonoff, Frishman, Paston, & Aronson, 1995), institutionalization (Branch & Ku, 1989; Kaplan, Strawbridge, Camacho, & Cohen, 1993), and even mortality (Idler & Benyamini, 1997; Mossey & Shapiro, 1982; Wolinsky & Johnson, 1992; McGee, Liao, Cao, & Cooper, 1999). Given these advantages, it is not surprising that countless clinical studies have relied on measures of subjective health to assess the value of health-promoting interventions.

When interpreting people's ratings of their own health, it is important to note that subjective health is not solely a reflection of objective health, but also reflects demographic characteristics (e.g., Cairney, 2000) and psychosocial variables (Quinn, Johnson, Poon, & Martin, 1999; Rodin & McAvay, 1992; Sinclair, Lyness, King, Cox, & Caine, 2001; Su & Ferraro, 1997). Among the psychosocial correlates of subjective health, personality is particularly important and has been implicated in a host of studies (e.g., Costa & McCrae, 1987; Jerram & Coleman, 1999; Korotkov & Hannah, 2004; McCrae & Costa, 1991, see below for a more detailed discussion). However, the observed association between personality traits and subjective health is inconsistent across studies and appears to be complex. As we discuss below, seemingly contradictory findings may be due to methodological limitations, under-identification of moderators, and a focus on predominantly young and healthy samples.

The present study aims to improve and extend previous research by examining the relation between personality traits and subjective health in two diverse samples of older adults that differ in health status. Specifically, we (1) use

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well-validated and comprehensive measures of personality traits and subjective health, (2) explore the relationship between personality traits and subjective health at greater levels of specificity than have been addressed in the past, (3) control for relevant sample characteristics, such as depression, and (4) examine age and poor *objective* health as possible moderators.

The literature on subjective health has used various definitions and measurement instruments, ranging from single items to lengthy questionnaires. In the present study, we adopt the differentiation between physical and mental components of subjective health proposed by Ware and his colleagues (Ware & Sherbourne, 1992; McHorney, Ware, & Raczek, 1996); most measures of subjective health can be grouped under one of these two components.

As a comprehensive and widely replicated model of personality, we adopt the five-factor taxonomy of personal traits (Goldberg, 1992; Paunonen, Zeidner, Engvik, Oosterveld, & Maliphant, 2000). According to the Five-Factor Model (FFM, McCrae & Costa, 2003), personality is organized hierarchically, with five higher order dimensions or factors that can be broken down into lower-level components, or facets. At the top level of the hierarchy, personality can be comprehensively described along the following dimensions: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C).

There are at least two pathways through which personality dimensions may influence ratings of subjective health. First, personality may influence subjective health indirectly via its influence on objective health. For example, personality traits may moderate physiological stress responses or promote healthy or unhealthy behavior patterns. Second, personality traits may shape (both positively and negatively) people's subjective interpretations of their objective health status. To provide an overview of such effects, we now discuss the association between each of the main FFM dimensions and measures of both objective and subjective health.

Individuals who score high on N tend to experience high levels of negative emotions, are easily overwhelmed by stressful experiences, and have difficulty controlling their impulses (e.g., Costa & McCrae, 1992). These characteristics may jeopardize objective health by suppressing immune responses (e.g., Phillips, Carroll, Burns, & Drayson, 2005) and promoting risky behaviors (e.g., Booth-Kewley & Vickers, 1994; Terracciano & Costa, 2004). In addition, N and related concepts, such as pessimism and negative emotionality, are associated with more negative interpretations of one's health status. This includes lower ratings of subjective global health (e.g., Benyamini, Idler, Leventhal, & Leventhal, 2000; Quinn et al., 1999; Hooker, Monahan, Shifren, & Hutchinson, 1992; Moor, Zimprich, Schmitt, & Kliegel, 2006), more health complaints (e.g., Feldman Reis, Andres, Pushkar Gold, Markiewicz, & Gauthier, 1994), and lower physical and mental health scores, as measured by the SF-36 (e.g., Duberstein et al., 2003; Jerram & Coleman, 1999; Kempen et al., 1999; Kempen, Jelicic, & Ormel, 1997; Kressin, Spiro, & Skinner, 2000; Wasylkiw & Fekken, 2002). People who are high in N also report higher physical symptoms counts (e.g., Feldman, Cohen, Doyle, Skoner, & Gwaltney, 1999; Neitzert, Davis, & Kennedy, 1997) and are likely to over-report symptoms (e.g., Feldman et al., 1999; Larsen, 1992). However, higher levels of N do not necessarily lead to less accurate assessments of one's health status. In some contexts, a more pessimistic outlook could curb self-serving biases and lead to more accurate self-perceptions (Pham, 2007).

Individuals high in E are sociable, active, and more likely to experience positive emotions (e.g., Costa & McCrae, 1992). High levels of E may influence objective health by promoting both beneficial (e.g., exercising, taking vitamins; Booth-Kewley & Vickers, 1994) and detrimental (e.g., smoking, Spielberger & Jacobs, 1982) health behaviors. Through its association with positive affect and optimism, E is linked to higher global ratings of subjective health (Jerram & Coleman, 1999; Korotkov & Hannah, 2004, although see Moor et al., 2006), higher self-reported physical functioning (Jerram & Coleman, 1999), and higher psychological well-being and life satisfaction (Jerram & Coleman, 1999; McCrae & Costa, 1991; Schmutte & Ryff, 1997). The association between E and self-reported symptoms appears to be equivocal. In a life-span sample of adults, E was negatively associated with symptom reports (Korotkov & Hannah, 2004), whereas in a sample of college students the association was curvilinear (Williams, O'Brien, & Colder, 2004), and in a sample of adult women, no association was found (Costa & McCrae, 1987).

Conscientious individuals act in a deliberate fashion and exercise self-control (e.g., Costa & McCrae, 1992). Not surprisingly such characteristics promote better objective health and lower mortality (e.g., Friedman, 2000) via fewer risky health behaviors (ranging from substance use to risky driving) and greater health-promoting behaviors (ranging from regular exercise to a healthy diet, e.g., Bogg & Roberts, 2004; Hampson, Goldberg, Vogt, & Dubanoski, 2007; Friedman et al., 1995). C is also associated with a sense of competence and achievement which may account for its positive association with global subjective health and vitality (e.g., Jerram & Coleman, 1999).

Compared to N, E, and C, research on the health implications of O and A is rather scarce, and any observed effects are comparatively small. Nevertheless, there is reason to expect at least some association between these dimensions and health-related variables. Individuals high in O are curious, willing to entertain novel ideas, and embrace unconventional values. This makes them more likely to take risks related to substance use (Booth-Kewley & Vickers, 1994), which may jeopardize their objective health. With regard to subjective health, open individuals were found to report better general health and physical functioning (Jerram & Coleman, 1999; but see Wasylkiw & Fekken, 2002), although their tendency to experience feelings more intensely may make them more likely to report physical symptoms (Feldman et al., 1999; Jerram & Coleman, 1999).

A is characterized by altruism, cooperativeness, and eagerness to help others. Since this dimension primarily describes interpersonal tendencies, it shows fewer associations with health-related measures. However, because of their pro-social orientation, agreeable individuals may be less likely to engage in reckless driving and substance use (Booth-Kewley & Vickers, 1994) and more likely to reap the health benefits associated with social support (Hoth, Christensen, Ehlers, Raichle,

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