Care Recipient Agreeableness Is Associated With Caregiver Subjective Physical Health Status

Catherine Riffin,[1] Corinna E. Löckenhoff,[1] Karl Pillemer,[1] Bruce Friedman,[2] and Paul T. Costa Jr.[3]

[1]Cornell University, Department of Human Development, Ithaca, NY 14853.
[2]University of Rochester, Departments of Community and Preventive Medicine, and Psychiatry, Rochester, NY 14642.
[3]Duke University School of Medicine, Behavioral Medicine Research Center, and Department of Psychiatry and Behavioral Sciences, Durham, NC 27708.

Objectives. The emotional and physical health consequences of caring for a family member are well documented. However, although personality has been shown to affect dyadic interactions and been linked with individual outcomes for both care recipients (CRs) and caregivers (CGs), the influence of CR personality on CG health remains unexplored.

Method. This study investigated cross-sectional associations between CRs' five-factor personality traits and CGs' physical and emotional health in 312 dyads of older adults with disability and their informal CGs who participated in the Medicare Primary and Consumer-Directed Care Demonstration.

Results. Regression models controlling for CG personality, strain, and sociodemographic characteristics and CR physical impairment and pain found that agreeableness in CRs was associated with better physical health among CGs. Facet-level analyses showed specific associations between the trust and compliance facets of CR agreeableness and CG physical health. Investigation of CR personality styles revealed that the "easygoing" (N−, A+) and "well-intentioned" (A+, C−) styles predicted better CG physical health; the "leaders" (E+, A−) style had the opposite effect. No significant associations were found between CR personality and CG mental health.

Discussion. Results from this study reveal the value of considering CR personality in relation to CG health and highlight the importance of assessing dispositional qualities within the context of care provision and informal assistance.

Key Words: Caregiving—Chronic illness—Five-factor model personality traits—Subjective health.

THEORETICAL models of the caregiving process (Pearlin, Mullan, Semple, & Skaff, 1990) have emphasized the influence of contextual factors and individual characteristics of the caregiver (CG) and care recipient (CR) on CG outcomes (Pinquart & Sörensen, 2007). One component that has received little attention, however, is CR personality. This is surprising given that personality has been linked to health outcomes for both the CR and the CG (Löckenhoff, Duberstein, Friedman, & Costa, 2011) and was shown to affect dyadic interactions within close relationships (Robins, Caspi, & Moffitt, 2000). This study expands upon the existing literature by exploring how five-factor personality traits of CRs may contribute to individual differences in CG mental and physical health.

With regard to mental health, Monin and Schulz (2009) have proposed that, independent of illness attributes (e.g., disability), patient suffering along with CG compassion will affect CGs' psychological morbidity. Based on this model, we expect that the effects of CR distress on CGs' mental health are more pronounced if CRs are more likely to express their emotions. Notably, both neuroticism and extraversion are associated with greater catastrophizing and emotional expressiveness (Phillips & Gatchel, 2000). Therefore, CRs who score high on these traits may be more likely to communicate their feelings of anguish to their

family members. In partial support of this notion, the single prior study investigating CR personality and CG mental health found that presurgical neuroticism among coronary artery bypass patients predicted postsurgical depression among their CGs (Ruiz, Matthews, Scheier, & Schulz, 2006). Although further research is required, these findings provide a foundation on which to argue that greater expressions of suffering, as conveyed by heightened levels of extraversion and neuroticism, may elicit greater psychological distress among CGs.

Even less is known about the role of CR personality in CGs' physical health. However, evidence from psychoneuroimmunology suggests that prolonged exposure to problematic interpersonal contexts poses challenges to endocrine and immune function, whereas supportive and less conflictual relationships promote physical wellness (Kiecolt-Glaser, Gouin, & Hantsoo, 2010). The physiological consequences of interpersonal experiences may be particularly pronounced in the close physical proximity and mutual dependence of caregiving contexts. Among the five-factor traits, agreeableness and conscientiousness are most closely linked with interpersonal processes and relationship satisfaction (White, Hendrick, & Hendrick, 2004). To date, only one study has examined the relationship between personality among cognitively intact CRs and the physical

health of their CGs. Although this study did not consider the full range of CR five-factor personality, it revealed a positive association between CR conscientiousness and CG self-reported physical functioning (Roberts, Smith, Jackson, & Edmonds, 2009). Taken together, the limited research record suggests that CG physical health may be associated with CRs' standing on agreeableness and conscientiousness.

Based on these considerations, we hypothesize that high neuroticism and extraversion in CRs will confer poor emotional health in CGs because of their association with emotional disturbance and pain catastrophizing (Phillips & Gatchel, 2000). In contrast, we expect that high agreeableness and conscientiousness in CRs will promote better physical health among CGs because the prior literature links CR behavior with CG physical functioning (Pinquart & Sörensen, 2007). We expect that facet-level effects will show a similar pattern to the corresponding higher level traits.

We also consider the circumplex combinations of factor pairs or *personality styles* (McCrae & Costa, 2010). For instance, CR styles characterized by high agreeableness (A+) and low neuroticism (N−) (i.e., "easygoing") may be associated with better health outcomes among CGs, whereas styles characterized by high extraversion (E+) and low agreeableness (A−) (i.e., "leader") may put CGs at risk for poor health. Given the limited research on personality styles and CG health, we do not propose specific hypotheses regarding styles.

Several covariates that have been previously associated with CG health will also be explored: CG sociodemographic characteristics (i.e., age, gender, education), CG strain, and CR pain and physical impairment (Pinquart & Sörensen, 2007).

METHOD

Participants

Data are drawn from the Medicare Primary and Consumer-Directed Care (PCDC) Demonstration, a randomized, controlled trial of PCDC (Friedman, Wamsley, Liebel, Saad, & Eggert, 2009). From 1998 to 2002, data were collected from CGs and CRs residing in 19 counties in Ohio, New York State, and West Virginia. Eligibility criteria included (a) enrollment in Medicare Part A and B, (b) needing or receiving help with at least two activities of daily living (ADLs) (e.g., bathing and dressing) or at least three instrumental activities of daily living (IADLs) (e.g., shopping and telephone use), and (c) receiving significant health care services. A comprehensive overview of eligibility criteria and recruitment can be found elsewhere (Friedman et al., 2009).

Of the initial sample consisting of 2,279 individuals who were assessed at study baseline, 1,786 (78.4%) were randomized and 1,605 dyads were followed for more than a 24-month period. CG and CR personality traits, CG subjective health, and CR pain and physical impairment were measured at 22 months. CRs with cognitive impairment were excluded because it was believed that they could not provide reliable personality data.

Cross-sectional analyses were conducted on a final sample of 312 dyads at 22 months who had complete data for the primary variables of interest for this study (i.e., CR personality and CG subjective health). CGs who were excluded due to missing data did not differ from the current sample in terms of age or gender but were less likely to be spouses (30% vs 42%, $\chi^2 = 6.77$, $p < .01$). See Table 1 for specific sample characteristics.

Measures

Personality in CRs and CGs was assessed with the NEO Personality Inventory Revised (Costa & McCrae, 1992), which provides scores for each of the five broad personality domains (neuroticism [N], extraversion [E], openness [O], agreeableness [A], and conscientiousness [C]) and six facets within each domain. Factor scores were computed as a weighted combination of the 30 facet scales. Factor scores and facet scales were then *t* standardized using U.S. norms (Costa & McCrae, 1992).

Subjective mental and physical health in CGs was assessed with the SF-36 Health Survey (Ware, Kosinski, & Keller, 1994). Summary scores for both mental and physical health were *t* standardized using the U.S. norms (Ware et al., 1994).

CG strain was assessed with 21 items adapted from Pearlin and colleagues (1990), which targeted overload, worry and strain, and role captivity (Cronbach's $\alpha = .89$).

Chronic pain in CRs was assessed with a single item asking for the presence of pain longer than 3 months (based on guidelines issued by the American Geriatrics Society Panel on Chronic Pain in Older Persons, 1998).

Physical impairment in CRs was assessed regarding 7 ADLs and 7 IADLs from Medicare's OASIS and Health of Seniors' surveys (for details, see Löckenhoff et al., 2011). We computed a single summary score across all items and performed a quartile split to limit skewness.

Analytic Plan

Separate ordinary least squares regression models (OLS) were conducted for CG physical and mental health as dependent variables. All analyses included CG age, gender, education, relationship status, coresidence, strain, and personality, as well as CR impairment, pain, and personality.

Supplemental analyses examining personality styles followed the approach by Weiss and Costa (2005) to identify CRs scoring high or low on a particular trait. Each domain

Table 1. Descriptives, Comparisons With National Norms, and Regression Models Predicting Caregiver Mental and Physical Health

Variable	M (SD)/%	National norms M	Regression models predicting caregiver subjective mental health β (SE)	t	Regression models predicting caregiver subjective physical health β (SE)	t
Caregiver characteristics (N = 312)						
Age	63.5 (14.0)		0.14 (0.01)	1.4	−0.22 (0.01)	−2.23
Sex (% female)	3.6 (1.2)		0.08 (0.15)	1.25	0.10 (0.16)	1.48
Education	71%		−0.01 (0.05)	−0.19	0.05 (0.06)	0.86
Relationship (% spouse)	30%		−0.02 (0.25)	−0.19	0.09 (0.27	−0.79
Coresidence (% coresiding)	59%		0.01 (0.17)	0.42	−0.07 (0.18	−0.85
Total strain	2.0 (0.4)		−0.29 (0.18)***	−4.91	−0.23 (0.19)***	−3.79
Neuroticism	51.4 (9.5)	46.8***	−0.38 (0.01)	−6.63	−0.19 (0.01)	−3.12
Extraversion	48.2 (9.0)	48.8	0.04 (0.01)	0.69	−0.01 (0.01)	−0.14
Openness	46.2 (9.9)	52.0	0.04 (0.01)	0.66	.004 (0.01)	0.67
Agreeableness	54.8 (9.0)	50.4*	−0.01 (0.01)	−0.23	−0.15 (0.01)	−2.49
Conscientiousness	49.3 (9.6)	50.8**	0.12 (0.01)*	2.06	0.20 (0.01)	3.5
SF-36 physical	43.7 (11.5)	47.7***				
SF-36 mental	49.9 (10.0)	51.7**				
Care recipient characteristics (N = 312)						
Age	80.6 (7.6)					
Sex (% female)	69%					
Education	2.8 (2.8)					
Pain status (% with pain)	55%		−0.01 (0.12)	-0.24	1.66 (0.13)	1.66
ADL/IADL impairment	2.1 (0.9)		−0.01 (0.06)***	−0.10	1.65 (0.07)	1.65
Neuroticism	52.7 (8.7)	45.8***	−0.02 (0.01)	−0.36	−0.03 (0.01)	−0.03
Extraversion	45.9 (7.6)	48.8**	−0.06 (0.01)	−1.05	−0.10(0.01)	−1.75
Openness	42.7 (8.0)	43.0***	−0.07 (0.01)	−1.10	0.06 (0.01)	1.03
Agreeableness	55.4 (9.3)	52.3***	−0.02 (0.01)	−0.26	0.17 (0.01)***	2.73
Conscientiousness	46.2 (8.7)	49.3***	0.03 (0.01)	0.50	−0.03 (0.01)	−0.58

Notes. Education levels are coded 1 = less than high school, 2 = some high school, 3 = high school graduate, 4 = some college, 5 = college degree, and 6 = more than college degree. Relationship with care recipient compares spouses with any other relationship type. ADL/IADL impairments are split into quartiles. For personality, we report national norms for middle-aged adults (for caregivers) and older adults (for care recipients). For SF-36, we report general adult norms.

*p <.05; **p <.01; ***p <.001.

was coded into −1 = ½ SD below the mean and 1 = ½ SD above the mean of the present sample. Based on these codes, CRs were classified into the styles described by McCrae and Costa (2010) (e.g., A = −1 and E = 1 are "leaders"). Those who were not classified on a certain style (because they fell within ½ SD of the mean on a particular trait) were excluded from the analysis.

RESULTS

Descriptive characteristics and comparisons with U.S. norms for personality and subjective health are reported in Table 1 (left columns). Table 1 (right columns) shows the results of regression models predicting CG health. Contrary to expectations, none of the personality domains among CRs were associated with CG subjective mental health after relevant covariates were controlled. However, CR agreeableness emerged as a significant predictor of better CG subjective physical health. Facet-level analyses revealed that the trust (β = 0.154, p = .023) and compliance (β = 0.136, p = .029) facets of CR agreeableness were related to better CG physical health.

Analyses of styles focused on the four styles involving CR agreeableness because this was the only trait showing a significant effect in the regression analyses: style of anger control

(A, N), n = 224; style of interaction (A, E), n = 189; style of character (A, C), n = 225; and style of attitudes (A, O), n = 233. Three types were associated with CG physical health. The "easygoing" (N−, A+) style of anger control (β = 0.126, p = .041) and "well-intentioned" (A+, C−) style of character (β = 0.152, p = .011) predicted better CG physical health. In contrast, the "leader" (E+, A−) style of interactions was associated with poorer CG physical health (β = −0.206, p = .003). All associations held after controlling for covariates, and supplemental analyses found no significant associations among any of the other CR personality styles and CG health.

DISCUSSION

This study is the first to systematically examine the association of five-factor personality traits in CRs with the subjective mental and physical health of their CGs. Specifically, we found a selective association between CR agreeableness and CG physical health. Conceivably, a hostile disposition in the CR may erode CG physical health by exacerbating stress and thus hastening bodily deterioration (Kiecolt-Glaser et al., 2010). Analyses of personality styles provided a complementary perspective suggesting that the implications of CR agreeableness for CG health may

depend on the CR's standing on other personality traits. Future investigations may benefit from further explorations of trait combinations. Although our study considered only CGs of cognitively intact individuals, our findings may also extend to CGs of cognitively impaired individuals who are commonly found to exhibit personality changes and behavioral problems (e.g., Bolger, Carpenter, & Strauss, 1994).

Several important limitations remain to be addressed in future research. First, we did not find any effects of CR personality on CGs' mental health. Perhaps replacing the generalized SF-36 mental health measure with more specific markers (e.g., depression, anxiety, positive emotionality) would yield further insights. Second, our design does not allow for causal inferences, and we were not able to perform a longitudinal analysis because data on personality facets were only collected at 22 months. Third, some measures could be strengthened (e.g., by replacing the single-item pain screen with a multi-item pain scale) and subjective ratings of health and strain could be supplemented with objective indicators including biomarkers of stress and immune functioning. In general, our findings warrant replication by other studies given that this was the first attempt to explore the full range of CR five-factor personality in relation to CG health. In particular, future work should examine more diverse CR populations and contrast acute versus chronic caregiving contexts.

Despite these limitations, this study provides a foundation for future research exploring the individual and interpersonal aspects of the caregiving experience. More broadly, our findings offer not only theoretical and methodological guidance for future inquiries but also hold clinical utility in tailoring appropriate interventions for patients and their informal CGs.

Correspondence

Correspondence should be addressed to Catherine Riffin, MA, Department of Human Development, G77 Martha Van Rensselaer Hall, Cornell University, Ithaca, NY 14853-4401. E-mail: cr347@cornell.edu.

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