Do Personality Traits Moderate the Impact of Care Receipt on End-of-Life Care Planning?

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Purpose of the Study: This study examines (a) the association between being a care recipient and end-of-life care planning (EOLCP) and (b) the extent to which personality traits moderate the relationship between care receipt and EOLCP. Design and Methods: Data are drawn from the Wisconsin Longitudinal Study, a survey of Wisconsin high school graduates from 1957 to 2004. We used data on EOLCP among older adults in the most recent (2003–2004) wave of this survey. Hierarchical logistic regression models are used to estimate the effects of care receipt and the moderating effects of personality. Results: Compared with their peers who are not receiving care, care recipients are more likely to engage in informal discussion on EOLCP. This association between care receipt and informal EOLCP is strengthened when the individual scores high on openness. Implications: Health practitioners should take into account older adults’ care needs and differing personality traits while helping older adults make successful EOLCP.

Key Words: Advance care planning, Conscientiousness, Neuroticism, Openness, Agreeableness

To promote end-of-life care planning (EOLCP), Congress in 1991 passed the Patient Self-Determination Act (PSDA) requiring all federally funded health care institutions to give patients an opportunity to complete advance directives or a living will (LW) and designate a durable power of attorney for health care (DPAHC). Additionally, patients are encouraged by physicians to discuss treatment preferences with their loved ones to ensure that their preferences are accurately interpreted and executed (Doukas & Hardwig, 2003).

Although studies based on samples of older adults and/or clinical populations have found as high as two thirds of Americans to have completed advance directives (Silveira, Kim, & Langa, 2010; Teno, Gruneir, Schwartz, Nanda, & Wetle, 2007), we know little about what deters the remaining individuals from engaging in EOLCP. If care providers are to methodically help patients plan for end-of-life care (EOLC), a more detailed understanding of motivational and detractive influences is needed. Our study contributes to this task in two ways. First, we examine the effect of older adults’ needs for personal care or care receiving experience on formal and informal preparations for EOLC. Such an assessment is important because older adults typically make health care decisions with their caregivers and physicians, and to the extent that a partnership is forged between these individuals through effective communication, health benefits to patients will be maximized. Second, unlike research that focuses on the impact of structural factors (e.g., socioeconomic status [SES]), we examine the moderating effects of personality in the relationship between care receipt and EOLCP.

Care Receipt and EOLCP

The experience of being a care recipient may be associated with older adults’ EOLCP because compared with those without care needs, care recipients may experience higher levels of stress.
associated with being sick and dependent (McPherson, Wilson, & Murray, 2007). Although being sick in and of itself can be onerous, witnessing commonly experienced stressors by caregivers, including friction with employment, financial hardships, interpersonal conflicts, and constrained social ties, may be more stressful (Anesenshel, Pearlin, & Schuler, 1993; Scharlach, Sobel, & Roberts, 1991). For care recipients, therefore, concerns about suffering to loved ones and freeing them of having to make difficult medical decisions may trigger engagement in EOLCP. Making their preferences known may be their way of preventing any additional and prolonged burden on their caregivers. Alternatively, care recipients may also be encouraged by their caregivers to engage in advance care planning.

Direct and Moderating Effects of Personality

Although being a care recipient could prompt older adults to engage in EOLCP, the magnitude of the association between care receipt and EOLCP may vary by one’s personality. In lieu of stressful circumstances, such as being ill and needing care, the ability to prevent or reduce distress emerging from them depends upon the individuals’ access to a variety of coping resources (Lazarus & Folkman, 1984). Positive personality traits, such as agreeableness, conscientiousness, and openness, may serve as an important coping resource in such circumstances rendering some individuals better equipped than others to deal with stress through proactive planning.

Although several studies have verified links among personality, effective coping, and a variety of health outcomes (Bolger & Zuckerman, 1995; Friedman, 2000; Sorensen, Duberstein, Chapman, Lyness, & Pinquart, 2008), few studies have examined its influence on EOLCP, not to mention its moderating effect in the relationship between care receipt and EOLCP. We argue that personality is an important personal resource in decision making that can help or impede individuals’ EOLCP. Furthermore, we propose that the strength of the relationship between care receipt and EOLCP likely varies by one’s personality. In the following, we summarize the characteristics related to four personality traits, namely, agreeableness, conscientiousness, neuroticism, and openness and explain how these traits may both directly influence EOLCP and also moderate the association between care receipt and EOLCP. Based on what we find here, counselors and social workers could construct the necessary direct services to intervene and assist older adults with care needs who due to certain traits are less likely to avail EOLCP.

Agreeableness reflects the tendency to be tolerant and accepting rather than cynical and hostile, which could be associated with preventive health behaviors, such as self-care and less substance use (Graziano & Tobin, 2009). Moreover, agreeable people are both eager to please others and take their advice to heart (Graziano & Tobin, 2009). Individuals with these tendencies may be more likely to follow up on their care providers’ recommendation for EOLCP, exerting a positive influence on formal planning. Given their desire to please others, they also may more readily talk about treatment preferences with their family members and engage in informal planning.

When these characteristics of agreeableness are combined with care receipt, they may also have a positive interactive effect on EOLCP because care recipients who are agreeable may be more likely to solicit others’ opinion about EOLC and engage in formal planning when it is advised by care providers. Thus, we expect that the association between care receipt and both informal and formal planning to be stronger for those scoring high on agreeableness.

Conscientiousness reflects elements of personality, such as self-discipline, responsibility, industriousness, and deliberation (McCrae & Costa, 1987), all of which predict planfulness, decision making, and an ability to reflect upon the future implications of present health conditions (Roberts, Caspi, & Moffitt, 2003). Highly conscientious individuals are more likely to avoid harmful health behaviors and engage in preventive ones than their less conscientious peers (Martin, Friedman, & Schwartz, 2007; Roberts, Walton, & Bogg, 2005). Moreover, given their greater sense of social control and duty to others, highly conscientious individuals are more likely to think about the impact of their decisions on the future well-being of their loved ones (Tucker, Elliot, & Klein, 2006) and therefore engage in both formal and informal EOLCP.

Conscientiousness may also exert a positive influence on the link between care receipt and EOLCP. Care recipients with higher levels of conscientiousness may be driven to make their EOLC wishes clear instead of placing the potential burden of substitute decision making on either family members or health care providers. Also, conscientious people’s propensity toward problem solving and proactive coping would prompt care recipients to engage in both informal and formal preparations.
Unlike conscientiousness, neuroticism involves the use of maladaptive coping strategies such as denial, distraction, escapist fantasies, and withdrawal (Bolger & Zuckerman, 1995; McCrae & Costa, 1987). Highly neurotic individuals tend to be pessimistic, anxious, and resentful (Brandes & Bienvenu, 2006), which is likely to result in their giving up on medical regimens, turning to substance abuse, and avoiding interpersonal assistance that helps protect health (Friedman, 2000; Terracciano & Costa, 2004). Characteristics such as these may hinder most people’s ability to think both rationally and anticipatorily leading to lower likelihood of engaging in formal and informal EOLCP.

Neuroticism may also exert a negative influence in the relationship between care receipt and EOLCP. Given persons who score high on neuroticism tend to perceive others as untrustworthy and unsupportive, care recipients who score higher on neuroticism may refrain from discussing EOLC with others and making formal planning, such as appointing a DPAHC. Neuroticism may also hinder care recipients’ capacity to believe in health care providers’ intent to provide best care at the end of life. Thus, although care receipt may prompt older adults to engage in EOLCP, such an effect may be reduced for those who score high in neuroticism. Alternatively, the inability to trust others may prompt care recipients to partake in formal planning, such as preparation of a LW.

Finally, openness is another trait that may have positive influence on EOLCP and in the ways that care receipt affects EOLCP. Individuals who score high on openness are highly tolerant of uncertainty, which is likely to make these individuals more malleable toward a variety of future health circumstances (Sorensen et al., 2008). Being able to entertain uncertainty, including grim health care circumstances, people who are more open to experience may be more likely to discuss openly matters related to EOLCP and make formal plans for impending events (Prenda & Lachman, 2001).

The positive influence of openness may be particularly pronounced among care recipients. Openness also is positively correlated with advanced problem-solving skills, a need to gather information, an ability to anticipate challenges, a desire to creatively tackle these challenges, and openness to accept life-altering situations (Bouchard, 2003). We expect these characteristics to render care recipients relatively open to exploring possible future events, even undesirable ones, and engage in both informal and formal EOLCP.

Other Influences

Although our focus was on the impact of care receipt and personality on EOLCP, these relationships may be confounded by the nature of the illness and the opportunity to interact with health systems (Carr & Khodyakov, 2007). Thus, we considered two health-related factors that may precede the care needs and thereby influence the relationship between care receipt and EOLCP. Specifically, we controlled in our analyses the number of chronic conditions and the past hospitalization experience. Furthermore, we controlled for respondents’ sense of not wanting to be a burden because it may potentially confound the effects of care receiving as well as conscientiousness on EOLCP. Care recipients, because of their dependence on others for care, may be particularly sensitive to being burdensome on others, which may lead to greater likelihood of EOLCP. By controlling for this variable, we could more precisely estimate the direct effect of care receipt. Finally, given that much research on EOLCP documents the influence of sociodemographic characteristics (Allen et al., 2003; Bravo, Dubois, & Paquet, 2003; Hopp, 2000; Kahana, Dan, Kahana, & Kercher, 2004; Lambert et al., 2005), we controlled for age, gender, education, income, and marital status. Including these factors allowed us to parse out the unique effects of care receipt and personality on EOLCP.

Design and Methods

Data

We use data from the Wisconsin Longitudinal Study (WLS), a longitudinal study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957. The respondents first completed a survey during their senior year when they were 17–18 years old (in 1957). WLS further interviewed these participants when they were at ages 36 (in 1975), 53–54 (in 1992–1993), and 64–65 (in 2003–2004). Data were collected both through mail and phone surveys. Retention rate was 82.32% in 1992 and 74.94% in 2004 samples.

In the most recent wave (2003–2004) of data, WLS researchers collected data on EOLCP and the experiences of care receiving and needs for personal care. Data on personality were collected both in 1992–1993 and 2003–2004. Data on EOLCP were obtained from randomly selected
70% of the total sample (end-of-life [EOL] sample) and data on care receiving from randomly selected 79% of the total sample (care receipt [CR] sample). EOL and CR samples do not necessarily overlap. Our analytic sample includes a total of 3,838 graduates who participated in both these modules as well as mail and telephone surveys in 1992–1993 and 2003–2004.

Measures

Dependent Variables.—We assessed respondents’ EOLCP based on the following questions administered in the 2003–2004 survey: (a) “People sometimes make plans about the types of medical treatment they want or don’t want if they become seriously ill in the future. Have you discussed your health care plans and preferences with anyone?” (b) “Have you made legal arrangements for someone to make decisions about your medical care if you become unable to make those decisions yourself? This is sometimes called a DPAHC.” (c) “Do you have a LW? This is a set of written instructions about the type of medical treatment you would want to receive if you were unconscious or somehow unable to communicate.” Response categories include 1 = yes and 0 = no. Given that most people complete the two formal components of EOLCP (LW and DPAHC) simultaneously (Hopp, 2000) and because preliminary analyses showed that the effects of care receipt and personality on DPAHC and LW are similar, we combined these two outcomes as formal planning in our analyses. We examined discussion on EOLC as a separate outcome (informal planning), as it is conceptually distinct from formal planning and also has different sets of limitations compared with formal planning (Fagerlin & Schneider, 2004).

Independent Variables.—Whether the respondent is a care recipient was assessed with a series of questions. First, the respondents were asked, “Because of any impairment or health problem, do you need the help of other persons in handling your routine needs, such as everyday household chores, doing necessary business, shopping or getting around for other purposes?” If the respondents answered no, they were asked: “Within the last 12 months, did you receive personal care for a period of one month or more from a family member or friend because of a health condition, illness, or disability?” The care recipient status was coded 1 if the respondent answered yes to either of the previous questions and 0 if they responded negatively to both questions.

Moderating Variables.—Agreeableness, conscientiousness, neuroticism, and openness were assessed in the 2003–2004 wave with the Big-Five Personality scales (John, 1990). WLS has obtained information on personality traits both in 1992–1993 and 2003–2004. We examined whether the levels of these four factors changed significantly over time. Paired t tests showed that there were no significant changes in conscientiousness and openness, whereas the level of neuroticism and agreeableness decreased over time (t = −8.06, p < .001 and t = −4.11, p < .001, respectively). However, using earlier or later measures of personality did not influence our results. Thus, we used the most recent measures.

Personality traits were assessed with a series of questions asking the participants to indicate how strongly they agreed with the self-descriptive statements (1 = strongly disagree, 6 = strongly agree). Agreeableness (α = .69) was assessed with the following items: someone who (a) tends to find fault with others, (b) is sometimes rude to others, (c) is generally trusting, (d) can be cold and aloof, (e) is considerate to almost everyone, and (f) likes to cooperate with others. First, second, and fourth items were reverse coded. Conscientiousness (α = .69) was assessed with someone who (a) does a thorough job, (b) is a reliable worker, (c) tends to be disorganized, (d) is lazy at times, (e) does things efficiently, and (f) is easily distracted. The third, fourth, and the last items were reverse coded. Neuroticism (α = .74) reflects responses to someone who (a) can be tense, (b) emotionally stable and not easily upset, (c) worries a lot, (d) remains calm in tense situations, and (e) gets nervous easily. The second and fourth items were reverse coded. Openness to experience (α = .62) was assessed with someone who (a) prefers the conventional, traditional, (b) prefers work that is routine and simple, (c) values artistic, aesthetic experiences, (d) has an active imagination, (e) wants things to be simple and clear-cut, and (f) is sophisticated in art, music, or literature. The first, second, and fifth items were reverse coded. The scores of these scales were calculated by summing up the responses if at least three of the six component items received a valid response. Missing responses were imputed to the mean of remaining valid items prior to summing. We dropped from the analysis 57 respondents (1.5% of the analytic sample) who did not provide
any valid response to the items comprising at least one of the scales. Higher scores reflect higher levels of a given personality attribute.

Health-Related Variables.—Number of chronic conditions in 2003 was assessed based on questions asking whether doctor has told the respondent that he/she has diabetes, high blood pressure, high blood sugar, cancer, heart problem, stroke, and arthritis. Because there were only a few people (n = 17, 0.44%) who had more than four of these conditions, five to six conditions were recoded as four conditions. History of past hospitalization was assessed with a question, “In the past 12 months, have you been a patient in the hospital for at least one night?” Response categories included yes and no.

Control Variables.—Sociodemographic variables include gender (1 = male), education (1 = college education or higher; 0 = less than a college education), log of total household income, and marital status (married, divorced/separated, widowed, never married). Total household income is a sum of all household members’ income, including earnings, income from social security and pensions, and other income. This measure was taken from an earlier wave (1992–1993) to minimize the possibility that EOLC decisions influenced couples’ income. However, when 1992 income values were missing or zero and there were valid responses in 2003, 2003 income were imputed into this variable. After this imputation, 83 people remained as having zero income, which could mean either no income or refusal to report income in the WLS data. Because “no income” and “refusal” can exert a starkly different impact on EOLCP and 83 people comprised only 2% of the analytic sample, we dropped these individuals from our final analyses. Sense of not wanting to be a burden was assessed in 2004 with the question, “To what extent do you agree that you’d rather not live than be a burden on someone?” (1 = strongly disagree to 5 = strongly agree). In the preliminary analysis, we also adjusted for the number of children and state of residence (Wisconsin vs. other states), but because of nonsignificant effects, we did not include these variables in the final models.

Plan of Analysis

First, we provided descriptive statistics comparing the means and proportions of dependent and independent variables between care recipients and nonrecipients in our sample. Next, multivariate logistic regression models were employed to estimate the effect of care receipt on the likelihood of informal and formal planning controlling for demographic, socioeconomic, and health characteristics. Hierarchical regression models were used to examine whether the effect of care receipt changes after potential confounding factors (i.e., number of chronic conditions and past hospitalization) are controlled. Thus, in Model 1, we included care receipt variable along with personality traits, demographic, and socioeconomic characteristics. In Model 2, we controlled for respondents’ health characteristics. In Model 3, we included interaction terms between care receipt and personality traits. In the preliminary analyses, we tested both separate models for each interaction term (each of four Personality Traits × Care Recipient Status) and the model with all four interaction terms together. In the results section, we show the model with significant interaction effects only.

Our independent and dependent variables were both obtained from 2004 data because the questions on care receipt and EOLCP were not ascertained in earlier waves. Although there is no conceptual rationale for why EOLCP may affect care receipt and personality, because we cannot specify the temporal order between care receipt, personality, and EOLCP, we do not have any leverage on the issue of whether being a care recipient or different personality traits results in EOLCP.

Results

Sample Characteristics

Table 1 shows descriptive statistics. As for the EOLCP variables, significantly larger proportion of care recipients reported having had discussion than noncare recipients. However, there were no significant differences in the level of formal planning. Care recipients and noncare recipients also differed in the proportion of women, household income, and the level of neuroticism. Table 2 shows the zero-ordered correlation among the indicators of formal and informal planning and four personality scales.

Direct Effects of Care Receipt and Personality on EOL Preparations

Next, we examined the effects of care receipt and personality on EOL preparations, controlling
for sociodemographic and health variables. Table 3 shows the models predicting the likelihood of engaging in two different EOL outcomes: formal planning (i.e., either LW or DPAHC) and informal planning (i.e., discussions about EOLCP). As shown in Models 1 and 2, care recipients were significantly more likely than noncare recipients to have discussed EOLCP (odds ratio \([OR] = 1.74\)). This effect persisted even when we included the two confounding factors (i.e., number of chronic conditions and past hospitalization) in the model \((OR = 1.49)\). However, the effect of care receipt on formal planning was not significant. As for the effects of personality, higher levels of conscientiousness and agreeableness were associated with greater likelihood of formal planning.

Among the control variables (see Model 2), being male, divorced or separated, or being never married were associated with less informal planning on EOLCP, whereas a greater number of chronic conditions, higher education, income, and sense of not wanting to be a burden were associated with higher likelihood of informal planning. Interestingly, formal planning was not significantly affected by the number of chronic conditions. Instead, those who had been hospitalized in the previous year were significantly more likely to complete formal planning. Being more educated, holding more income, being widowed, and sense of not wanting to be a burden were associated with

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Table 2. Pearson Correlations Between Care Receiving, Personality Traits, and End-of-Life Care Planning (EOLCP)

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Care recipient status</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Conscientiousness</td>
<td></td>
<td>−0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Neuroticism</td>
<td></td>
<td>0.07**</td>
<td>−0.31**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4 Openness</td>
<td></td>
<td>−0.02</td>
<td>0.15**</td>
<td>−0.27**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Agreeableness</td>
<td></td>
<td>0.02</td>
<td>0.36**</td>
<td>−0.30**</td>
<td>0.09**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>6 Discussed EOLCP</td>
<td></td>
<td>0.04**</td>
<td>0.06**</td>
<td>−0.03*</td>
<td>0.1**</td>
<td>0.05**</td>
<td>1.00</td>
</tr>
<tr>
<td>7 Made formal EOLCP</td>
<td></td>
<td>0.02</td>
<td>0.07**</td>
<td>−0.05**</td>
<td>0.05**</td>
<td>0.05**</td>
<td>0.40**</td>
</tr>
</tbody>
</table>

Note: *p < .05, **p < .01.
Table 3. Odds Ratio Estimates for the Effects of Care Receiving and Personality on End-of-Life Care Planning

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Informal planning (discussions)</th>
<th>Formal planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Care recipient (1 = yes)</td>
<td>1.74** (0.32)</td>
<td>1.49* (0.29)</td>
</tr>
<tr>
<td>Personality traits, 2003–2004</td>
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<tr>
<td>Conscientiousness</td>
<td>1.10* (0.05)</td>
<td>1.11* (0.05)</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>1.02 (0.05)</td>
<td>1.01 (0.05)</td>
</tr>
<tr>
<td>Openness</td>
<td>1.24*** (0.06)</td>
<td>1.24*** (0.06)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>1.05 (0.05)</td>
<td>1.05 (0.05)</td>
</tr>
<tr>
<td>Health characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of chronic illnesses, 2003–2004</td>
<td>1.18*** (0.05)</td>
<td>1.18*** (0.05)</td>
</tr>
<tr>
<td>Past hospitalization (1 = yes, 0 = no), 2003–2004</td>
<td>1.05 (0.14)</td>
<td>1.05 (0.14)</td>
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<tr>
<td>Sociodemographic variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (1 = male, 0 = female)</td>
<td>0.64*** (0.06)</td>
<td>0.63*** (0.05)</td>
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<tr>
<td>College educated (1 = yes, 0 = no)</td>
<td>1.32** (0.12)</td>
<td>1.36*** (0.12)</td>
</tr>
<tr>
<td>Log of total household income, 1992–1993</td>
<td>1.27*** (0.06)</td>
<td>1.27*** (0.06)</td>
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<tr>
<td>Marital status, 2003–2004</td>
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<tr>
<td>Divorced/separated</td>
<td>0.55*** (0.07)</td>
<td>0.56*** (0.07)</td>
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<tr>
<td>Widowed</td>
<td>1.02 (0.16)</td>
<td>1.02 (0.16)</td>
</tr>
<tr>
<td>Never married</td>
<td>0.35*** (0.07)</td>
<td>0.35*** (0.07)</td>
</tr>
<tr>
<td>Not wanting to be a burden, 2003–2004</td>
<td>1.18*** (0.04)</td>
<td>1.18*** (0.04)</td>
</tr>
<tr>
<td>Interaction terms</td>
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<td></td>
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<tr>
<td>Care Recipient x Openness</td>
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<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.15*** (0.08)</td>
<td>0.12*** (0.06)</td>
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<tr>
<td>Observations*</td>
<td>3,607</td>
<td>3,607</td>
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<tr>
<td>Log likelihood</td>
<td>−1.913</td>
<td>−1.904</td>
</tr>
<tr>
<td>df</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>199.8</td>
<td>219.2</td>
</tr>
</tbody>
</table>

Notes: *Only the respondents with complete data were included in the regression analyses.  
***p < .001, **p < .01, *p < .05.
greater likelihood of formal planning, whereas divorced people were less likely to have made any formal planning.

**Moderating Effects of Personality**

Our second objective was to examine the extent to which the associations between care receipt and EOLCP are moderated by personality. We had four moderating variables (each personality trait by care needs) for two outcomes, resulting in a total of eight interaction effects. Among these, only openness significantly moderated the effect of care receipt on informal planning in the model where we tested one interaction effect (Openness × Care Needs). In the model where we tested four interaction effects together, this effect (Openness × Care Needs) was marginally significant. We show the former model in Table 3, Model 3. The result indicates that care recipients are more likely to engage in discussions about EOLCP when they score high on openness (see also Figure 1).

**Discussion**

EOLCP is a complex process given that it involves thinking about aging, infirmity, and death. As such, there are variations in the extent to which older adults in the United States complete advance directives and the type of planning they make for EOLC (Silveira et al., 2010; Teno et al., 2007). Our study contributed to this area of research by examining the effects of care receipt and personality as motivational factors of EOLCP.

**Care Receipt and EOLCP**

As expected, care recipients were more likely to discuss their EOLCP than their peers without care needs. However, when it comes to formal planning, such as LW and DPAHC, the difference between care recipients and noncare recipients was not statistically significant. Thus, the results only partially support our hypothesis that care receipt is associated with greater likelihood of EOLCP.

Several factors may explain why care receiving prompts informal discussions related to EOLC but has less of an impact on formal preparations. Given PSDA, formal planning may result more from an opportunity to interact with the health care system, as indicated by past hospitalization experience. Lack of formal planning also may reflect lack of a desire to map out the future. Care recipients may be no different than noncare recipients in that they do not think about impending death until they get seriously ill. Additional research is needed to test these assumptions.

**Personality and EOLCP**

Our findings showed that conscientiousness, agreeableness, and openness exerted significant main effects on some aspect of EOLCP. Higher levels of conscientiousness and agreeableness were associated with greater likelihood of formal planning. Higher levels of conscientiousness and openness were associated with informal planning. These findings are consistent with previous literature, which suggests that individuals scoring high on conscientiousness have the capacity to plan ahead and are conscious of how their actions or inactions may impact others. Likewise, individuals scoring higher on agreeableness are likely to solicit advice, do what’s prescribed to them, and often do so in order to please others (e.g., physicians and kin). The insignificant effect of openness on formal planning, however, was surprising. This could mean that openness may render individuals open to thinking and talking about a variety of future circumstances but is not effective in motivating formal decision making.

The lack of a significant impact of neuroticism on EOLCP also was surprising given previous research findings that neurotic individuals tend to be less effective at problem solving and proactive coping (Sorensen et al., 2008) and have poor organizational skills (Prenda & Lachman, 2001). We expected that such characteristics would prevent neurotic individuals from discussing treatment preferences and engaging in formal planning.
Future research is needed to find out why certain personality traits exert a significant impact on EOLCP although others do not.

**Moderating Effects of Personality**

Contrary to our hypotheses, there was little evidence for moderating effects of personality in the relationship between care receipt and EOLCP. Openness was the only trait that showed significant influence in the relationship between care receipt and informal planning. Openness was found to positively shape the association between care receiving and informal discussion on EOLCP. This finding is consistent with research suggesting that openness is related to cognitive flexibility, optimistic attitudes, and an ability to entertain even the undesirable circumstances (Prenda & Lachman, 2001). The lack of a moderating effect on formal planning, however, may reflect the complexity surrounding this trait. Specifically, we suspect that an overly positive view of the future and the divergent thinking capacity may not help formal EOLCP.

Three out of four personality traits did not significantly moderate the association between care receiving and EOLCP. The lack of significant moderating effects of personality was unexpected given previous literature on the behavioral patterns associated with these personality traits. The lack of statistically significant findings, however, should not be considered as a definite statement on this issue. It is likely that personality attributes only affect the initial decision-making stages of EOLCP (Sorensen et al., 2008). For instance, being particularly open to new experiences may motivate care recipients to think about and to discuss options related to EOLC, but it still may not expedite other aspects of EOLCP, including preparing a LW and appointing a DPAHC. Also, it is possible that certain traits, such as conscientiousness, may be associated with health-promoting behaviors and planning across all groups of the population as suggested by its significant main effects on both formal and informal EOLCP. That is, rather than exerting a moderating effect, personality traits may exert a universal effect on EOLCP. For example, elements of conscientiousness, such as determination, responsibility, sense of obligation and social control, planfulness, and appreciation for challenges, may facilitate individuals to reflect upon the future implications of their health care decisions regardless of their care receiving status.

**Other Influences**

Our study also identified other factors that exerted significant influences on EOLCP. Consistent with previous literature (e.g., Carr & Khodyakov, 2007), we find that being single, less educated, male, and poor are risk factors for failing to making one’s EOL preferences known. These findings highlight the double disadvantages faced by people with scarce social and economic resources. Because of their limited resources, they are less likely to receive quality health care. Moreover, it is often difficult for those with scarce socioeconomic resources to prioritize prevention and future care-related activities in the milieu of more pressing needs, such as obtaining food, shelter, and safety (Wolff et al., 2003). Thus, in order for PSDA to be effective, special attention should be given to socially vulnerable groups who may not get sufficient information or access to EOLCP.

**Limitations and Future Directions**

Our study has several limitations. First, our study focused entirely on young-old, White, and high school educated adults, a greater proportion of whom still live in Wisconsin in 2004. As such, the WLS respondents had a considerably higher rate of advance directive completion than typically found in more diversely representative samples (e.g., Hopp, 2000). Second, given that the data on care receipt and EOLCP were obtained concurrently, the temporal direction between these two variables cannot be determined. Although personality is found mostly to remain stable over the life course (McCrae & Costa, 1987), some research suggests that personality traits are dynamic and influenced by major life events (Caspi, Roberts, & Shiner, 2005). Although we do not anticipate personality to change due to EOLCP, to gain a fuller understanding of the relationship among care needs, personality, and EOLCP, a longitudinal approach is needed. Additionally, given well-documented psychometric properties of other personality measures such as the Neuroticism, Extraversion, Openness to Experience Personality Inventory, future studies should also investigate these measures and examine if using these measures yield different findings related to the moderating effects of personality. Third, although we controlled for the number of chronic conditions, we could not fully take into account the nature of care; someone who had received care in the past 12 months due to an acute condition may be qualitatively different from...
someone who needs care due to a chronic debilitating conditions. Future research should examine the complex characteristics of the care recipient, including the nature and stage of their illness. For instance, although being acutely ill allows those receiving care to reciprocate by helping out their loved ones, chronic illness leaves very little hope for reciprocity in the caregiver–care receiver relationship. The perception of their inability to help their caregivers may only prompt those receiving care to be more proactive about their EOL treatment decisions.

**Conclusion**

Thinking about EOL issues may be particularly daunting to those dependent on others for care. Although care recipients in our study were more likely to engage in informal planning, they were no different from noncare recipients in their formal EOLCP. Given that care recipients are at greater risk of encountering health crisis, we suggest that more attention be paid to assisting care receivers with the knowledge, skills, and attitudes necessary to be active partners in their care. Given that decisions related to EOLCP often involve those in our support network, efforts must be concentrated toward creating and sustaining effective partnerships between care receivers and caregivers. Some individuals do not execute advance directives but rather rely on their caregivers to make decisions for them (High, 1994). In such cases, the opinions of caregivers are likely to influence not only whether care receivers plan for EOL needs but also the types of choices they make. Thus, efforts must be made to ensure that decisions related to EOLCP reflect care receivers’ as opposed to caregivers’ values and preferences, and equally important would be to check that it is not the pressure of relieving caregivers but instead care recipients’ beliefs and faith that dictate decisions pertaining to EOLCP.

Moreover, although the western culture of medicine advocates principles of consumer choice and frank decision making, some persons, by virtue of their personality, may not be able to participate in it, preventing them from availing adequate care. For instance, older adults scoring low on agreeableness may be cynical, hostile, and more circumspect about talking with health providers or even their own family members. If so, health practitioners may need to make extra efforts in explaining how EOLCP can be helpful in letting their preferences known and respected at the end of life. Similarly, if older adults are less open to taking formal approaches to EOLCP, practitioners can encourage informal discussion about EOLCP with family members to draw attention to EOLC issues. Those who are less open also may experience trouble interpreting options related to future care, and if so, having third party assistance may prove helpful. Given the well-documented link between conscientiousness and health behaviors, health professionals can assist those scoring low on this trait by helping them develop planning and organizational skills. It may also mean that those scoring low on this trait may be helped by involving a trained professional to complete the process related to EOLC.

Although personality traits are said to have a high temporal stability, counselors and practitioners can come up with behavior assessment to identify target behaviors and select intervention strategies to aid in the change of behavior for those whose personalities prevent them from engaging in protective health behaviors. Of course, it is often not possible for health professionals to assess patients’ personality traits in short encounters. However, taking into account differences in personality in discussing care preferences can enhance the communications between health providers and care recipients in making efficient EOLCP.

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