Factors associated with Advance Care Plans and end-of-life care choices among elderly Americans: an analysis of Health and Retirement Study data

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Introduction

The umbrella term Advance Care Plans (ACP) includes the three most commonly used end-of-life care plans: Advance Care Planning Discussions (ACP discussions), living will and Durable Power of Attorney for Health Care (DPAHC). The latter two are documented and are called advance directives. ACPs allow people to plan for their end-of-life care before they become incompetent to make their treatment decisions.

Although, grouped under a single term, the ACPs are distinct nuances of end-of-life care planning. ACP discussions allow for discussions on a wide array of end-of-life care issues. A living will elicits specific treatment choices. A DPAHC appoints a proxy who will take treatment decisions on behalf of the incompetent patient. Previous studies have used ACPs as distinct outcomes but in real life the ACPs exist in combinations. Therefore, it is imperative to evaluate the factors associated with the combinations of ACPs: No ACP; ACP discussions only; a directive and ACP discussions; both directives; all ACPs.

Previous research indicates a vague association between health status and ACP uptake. While some studies have shown no association between self-reported health and ACP, others found poor health associated with a higher uptake of ACP. Therefore, in our first study, we attempted to clarify the association between self-reported health, change in health status and the interaction between the two factors with the uptake of the combinations of ACPs.

Our second study determined the factors associated with end-of-life care choices. To the best of our knowledge, no study has yet determined the association between health status and

end-of-life care choices using prospect theory on a representative population sample. Therefore, we are first to evaluate the role of prospect theory in determining the association between health status and end-of-life care choices on a representative sample of elderly Americans.

Methods

We used the Health and Retirement Study (HRS) panel data from 1992-2014 and the HRS exit interview data from 2002-2014. The HRS has been administering biennial surveys since 1992 to capture the health and retirement indicators of a representative sample of 20,000 Americans of age over 50 years. It also conducts one-time post-death interviews with the next-of-kin of deceased participants in the wave following the death of the participant. The survey elicits information on ACPs and end-of-life care choices as part of post-death interviews.

We used the SAS version 9.4 for analysis. The Fully Conditional Specification (FCS) multiple imputation method was used to impute missing values in the data. We used multinomial regression model to determine the factors associated with combinations of ACPs and three separate logistic regression models to determine the factors associated with each end-of-life care choice: limit care in certain situations, comfort care and all care possible.

Results

We found no association between the self-reported health and change in health status and the combinations of ACPs. However, the interaction between the two factors was associated with the uptake of all ACPs. No other health measure (number of comorbidities, difficulties in daily living, heart disease, stroke and psychiatric illness) was associated with the uptake of any other combination of ACP.

Our second study revealed that the objective measures of health, that is, physician diagnosed disease measures, including a history of stroke and psychiatric illness were associated

with end-of-life care choices. Decedents with a history of stroke or psychiatric illness were less likely to choose care-limiting choices and more likely to choose life-extending care choices. The finding aligns with the prospect theory, which proposes that poor health will lead to life-extending care choices.

However, the subjective measures, including self-reported health and change in health status, were not associated with the choices. The interaction between the two factors was associated with the all care possible choice. The decedents who had both worse health and decline in health status were less likely to choose the all care possible choice. The finding is contradictory to the tenet of the prospect theory. The theory expects people with worse and declining health to choose life-extending care.

Recommendations

We recommend further research on the factors associated with the combinations of ACPs. The future research should determine the implications of the combinations of ACPs on the cost and quality of end-of-life care choices. Further, future research should also evaluate the role of prospect theory in predicting the end-of-life care choices on representative population samples after adjusting for the disease prognostic factors.