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Perceptions of Health Status and Survival in Patients with Metastatic Lung Cancer

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MASSACHUSETTS
GENERAL HOSPITAL

CANCER CENTER

Background

Among patients with advanced cancer, cognitive acceptance (or awareness) of terminal illness is associated with:

- a preference for symptom-directed versus life-extending care;
- higher rates of DNR orders and hospice use;
- greater likelihood of discussing and receiving end-of-life care that is consistent with wishes.

Background

However, research to date on cognitive acceptance (or awareness) of terminal illness has been limited with respect to:

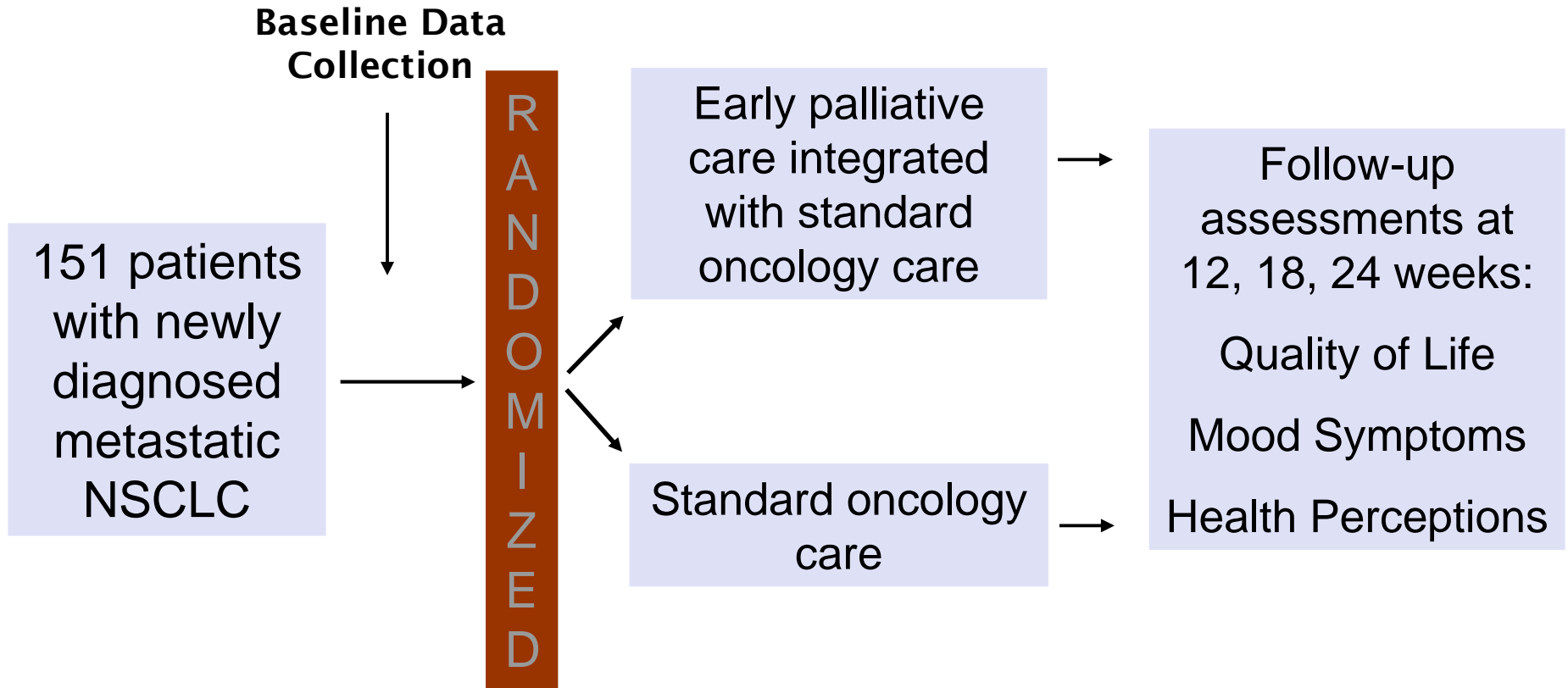
- investigating change in perceptions of health status over time;
- identifying predictors of cognitive acceptance or awareness of terminal illness;
- exploring associations between perceived health status and survival.

Study Objectives

In this secondary analysis of a randomized controlled trial of early palliative care for patients with metastatic NSCLC, we sought to:

- explore perceptions of health status (i.e., terminality) at four different time points;
- identify correlates of perceptions of health status at diagnosis;
- examine the degree to which change in perceptions of health status over time is associated with survival.

Original Study Design



Participant Sample

Eligibility Criteria:

- Metastatic NSCLC diagnosed within the previous 8 weeks
- ECOG performance status ranging from 0 (asymptomatic) to 2 (symptomatic but in bed <50% of time)
- Ability to read and respond to questions in English
- Planning to receive care at the MGH Cancer Center

Study Measures

Quality of Life:

- FACT-Lung: physical, social, emotional, and functional wellbeing in the past week.
 - Lung Cancer Subscale (LCS): Lung cancer specific symptoms
 - Trial Outcome Index (TOI): LCS plus physical and functional wellbeing subscales

Psychological Distress:

- Hospital Anxiety and Depression Scale (HADS)
 - Score > 7 on each subscale indicative of symptoms of anxiety or depression

Study Measures

Perceptions of Health Status:

- Single-item in which participants were asked to describe their current health status as either:
 - “relatively healthy”
 - “seriously but not terminally ill”
 - “seriously and terminally ill”

Clinical Characteristics (chart review):

- Initial chemotherapy; performance status, smoking status, and presence of brain metastases at baseline

Statistical Analyses

Bivariate associations between baseline perceptions of health status and other study variables:

- Two-sided chi square tests and ANOVA

Analyses of perceived health status predicting survival:

- Log-rank test and Cox proportional-hazards regression model with time-dependent covariates

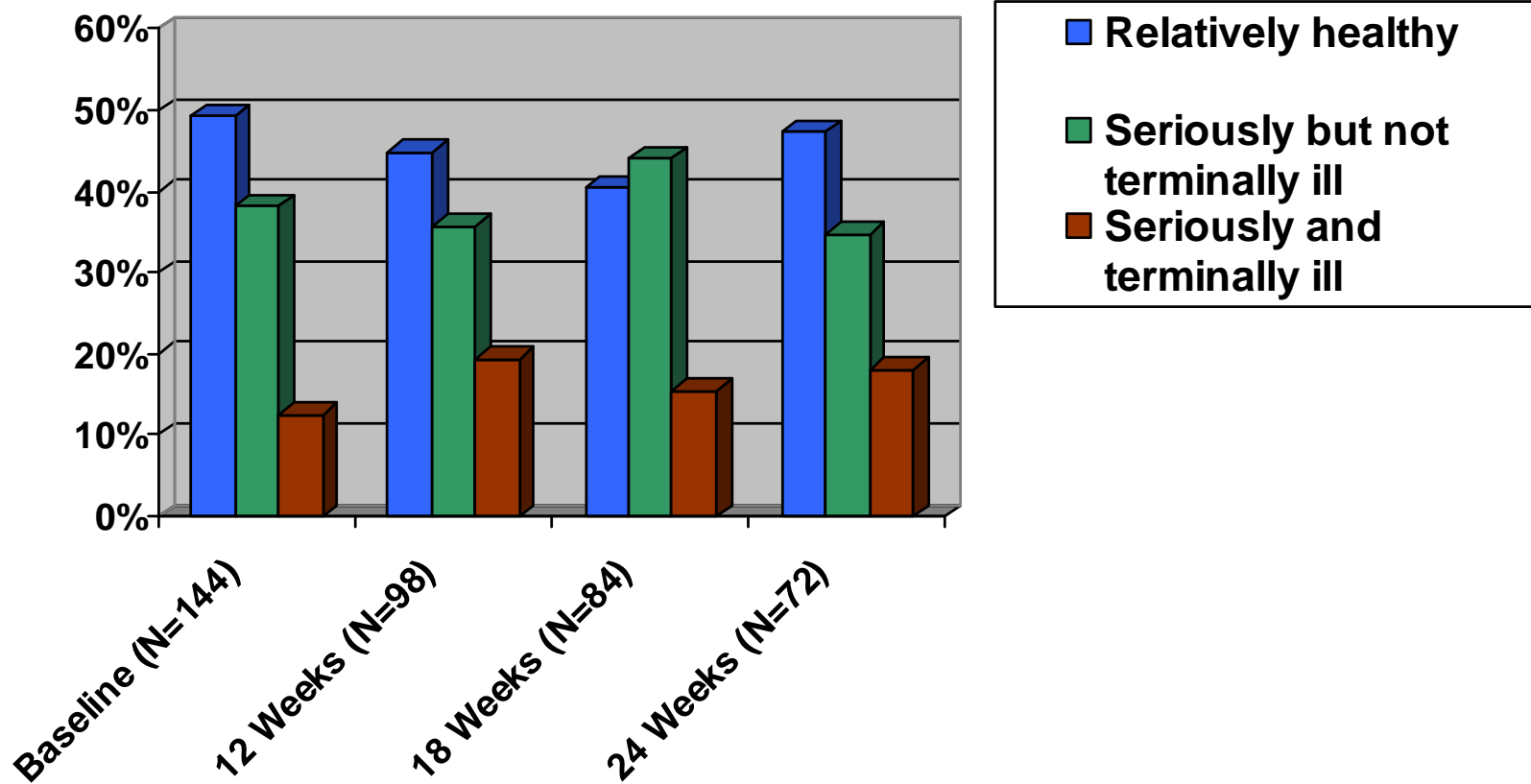
Results: Sample Demographic Characteristics (N=151)

Sample Demographics	N (%) or M (SD)
Age Mean (SD)	64.39 (9.55)
Female	78 (51.7)
Race	
Caucasian	147 (97.3)
African American	3 (2.0)
Asian	1 (0.7)
Ethnicity	
Hispanic	2 (1.3)
Marital Status	
Married	93 (61.6)
Single	18 (11.9)
Divorced/Separated	24 (15.9)
Widowed	16 (10.6)

Results: Baseline Clinical Characteristics

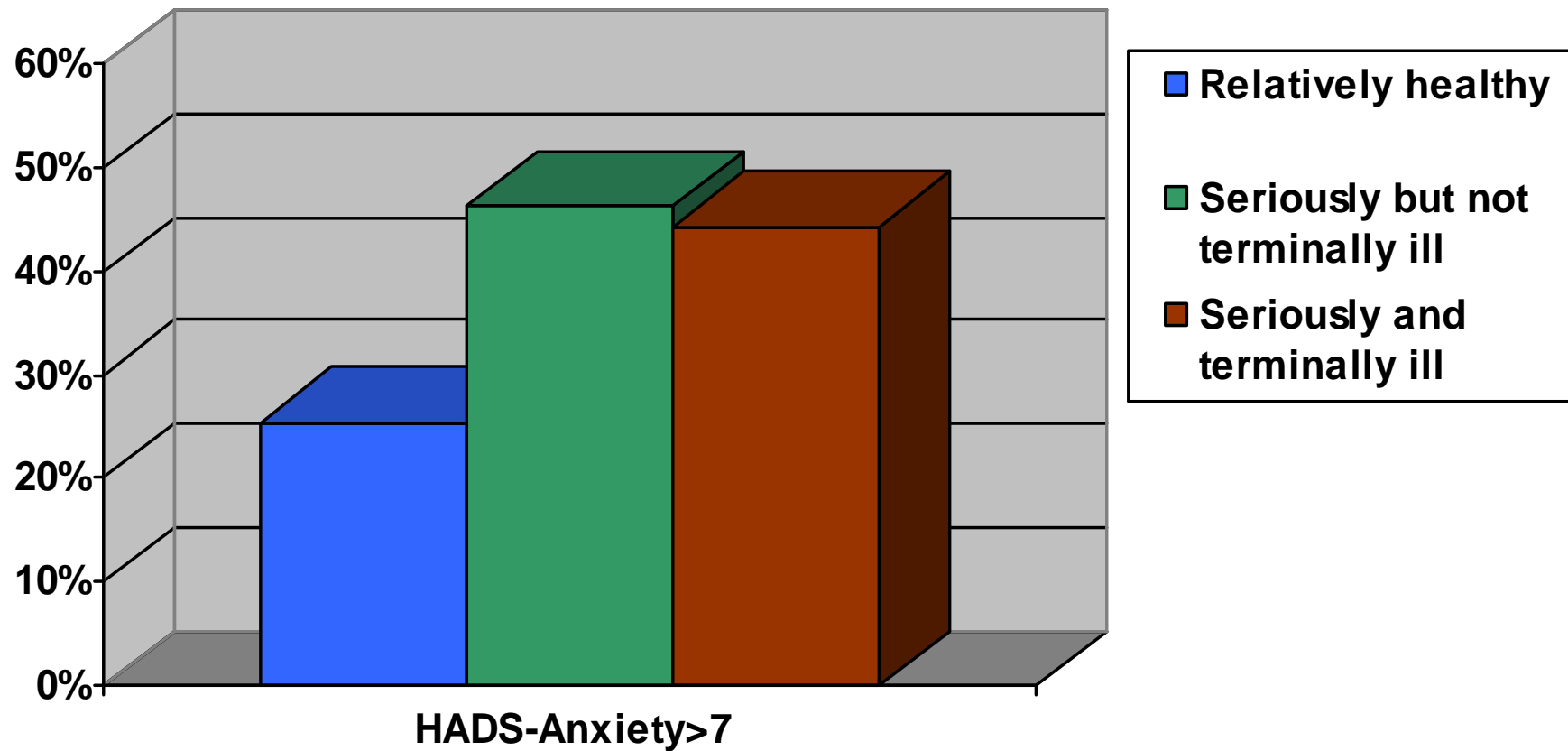
Clinical Characteristics	N (%)
Initial Chemotherapy	
Platinum-based regimen	70 (46.3)
Other (single agent; oral)	80 (53.0)
ECOG Performance Status	
0	56 (37.1)
1	81 (53.6)
2	14 (9.3)
Smoker at Diagnosis	39 (25.8)
Brain Metastasis	43 (28.5)
HADS	
Anxiety	52 (34.4)
Depression	35 (23.2)
FACT-L TOI	55.75 (13.21)

Results: Perceptions of Health Status

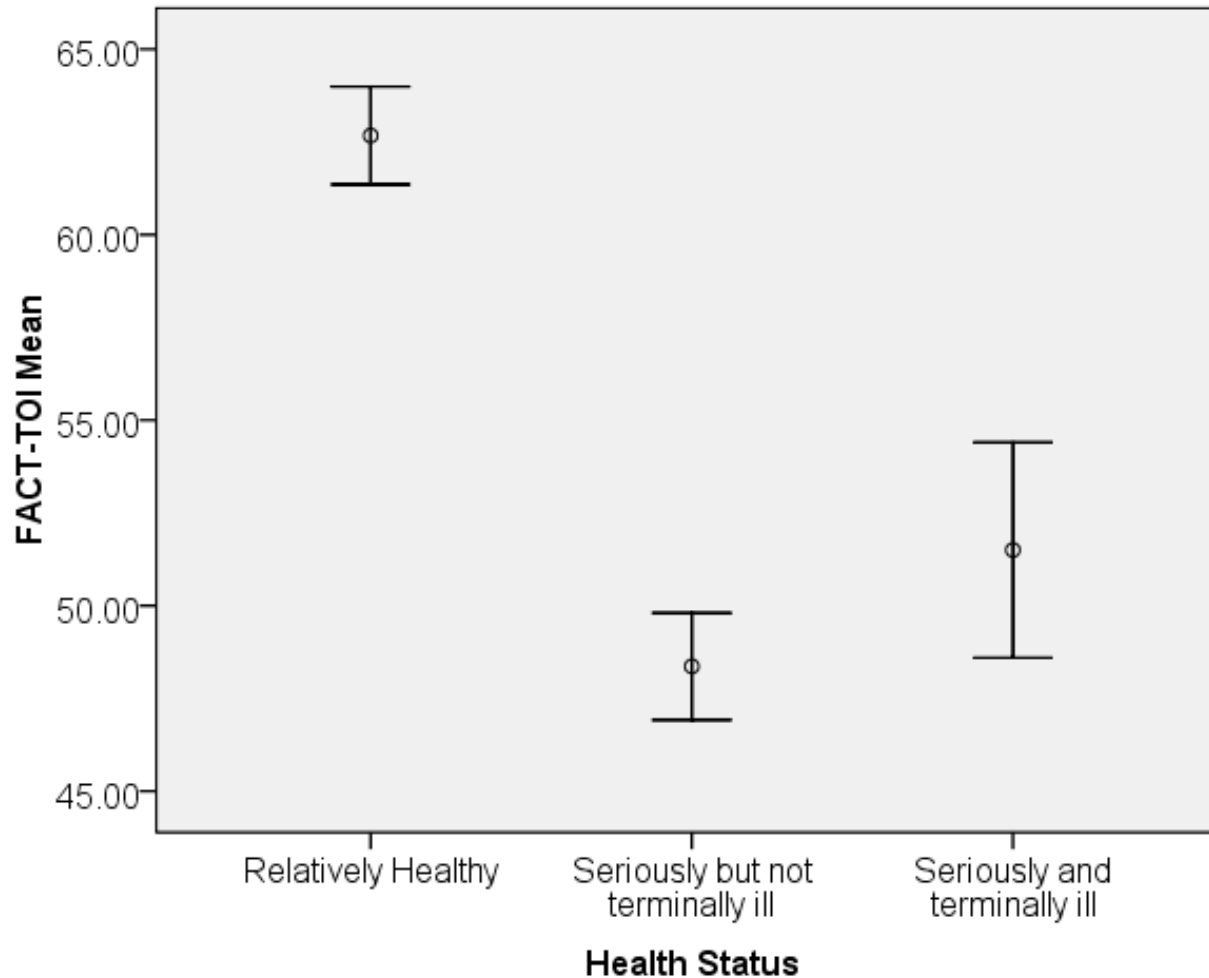


Results: Baseline Perceptions of Health Status and Anxiety Symptoms

$\chi^2=6.56, p=.04$



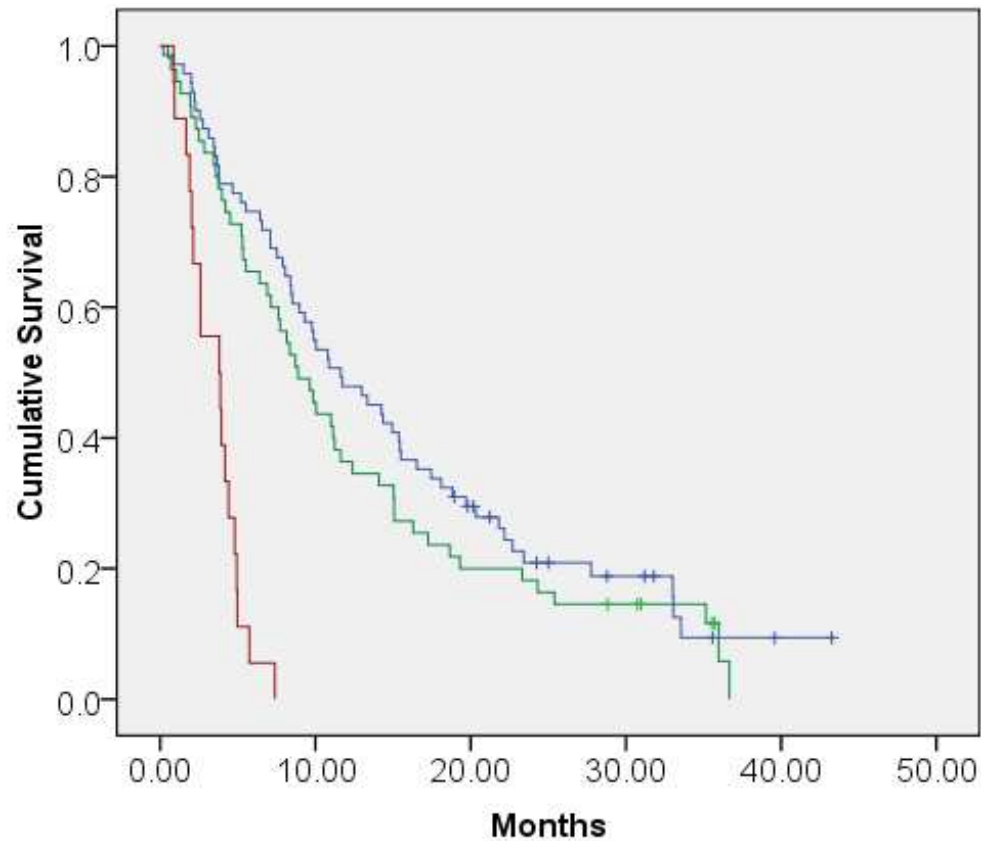
Results: Baseline Perceptions of Health Status and Quality of Life



**$F(2,140)=27.29,$
 $p<.001$**

Results: Baseline Perceptions of Health Status and Survival

Perceptions of Health Status and Survival



— Relatively healthy
— Seriously but not terminally ill
— Seriously and terminally ill

Log Rank Test $p < .001$

Results: Perceptions of Health Status Over Time and Survival

Cox Proportional-Hazards Model with Time-Varying Covariates

Predictor	HR (95% CI)	p-value
Sex	.51 (.32, .80)	.003
Marital Status	1.97 (1.25, 3.11)	.004
FACT-TOI	.97 (.95, .99)	.002
Smoker at Diagnosis	1.68 (1.00, 2.82)	.05
Group Assignment	1.82 (1.16, 2.83)	.009
Perceptions of Health Status	1.60 (1.15, 2.23)	.006

Summary

Approximately 12-18% of patients with metastatic NSCLC report their illness as seriously and terminally ill across four time points.

Patients who believe their health status is serious and terminal are more likely to be anxious and have lower quality of life compared to those who do not believe their illness is terminal.

Patients who initially or eventually reported that they were seriously and terminally ill had shorter survival, even after adjusting for decline in physical and functional wellbeing, among other known prognostic factors.

Study Limitations & Future Directions

Response options for perceptions of health status

- e.g., “relatively healthy and terminally ill”

Secondary, exploratory analysis of clinical trial data

- Role of early palliative care in shaping patients’ illness understanding

Mediating mechanisms between perceptions of health status and survival

- Health-risk behaviors, adherence to medical treatment, etc.

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