

Health Literacy and Prostate Cancer

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Background:

Health literacy, defined as the degree to which individuals can find, understand, and use information to make health-related decisions, is an important determinant of health. Health literacy is essential for patients to make informed decisions about their healthcare, including preventive services such as cancer screening and survivorship. We sought to assess the relationship between health literacy and prostate-specific antigen (PSA) screening, as well as mortality among patients diagnosed with prostate cancer (PC).

Methods:

We conducted two separate retrospective cohort studies to examine the association between health literacy and (1) PSA screening and (2) mortality in patients with PC. To assess the association between health literacy and annual PSA screening according to U.S. Preventive Services Task Force (USPSTF) guidelines, we used data (n=25,327) from the National Institutes of Health's All of Us Research Program from 2017 to 2023. To assess the association between health literacy and mortality, we analyzed data from a tertiary institution including men diagnosed with PC (n=1,629) between 2008 and 2018. In both cohorts, health literacy was measured using the 3-item Brief Health Literacy Screen (BHLS; range 3–15), with scores less than 10 indicating low health literacy. Multivariable logistic regression models were used to estimate odds ratios (OR) for PSA screening, adjusting for race, income, insurance status, employment status, and marital status. To assess the association between health literacy and all-cause mortality, model-based summary measures (median survival time) were calculated, and partial effect plots of the log relative hazard were constructed to visualize potentially nonlinear associations between BHLS score, PC stage, and mortality, adjusting for age, race or ethnicity, comorbidity, treatment type, and insurance status.

Results:

Among the PSA screening cohort, 4,057 (16%) had low health literacy, and 6,544 (26%) were adherent to PSA screening guidelines. A higher proportion of men with adequate health literacy underwent PSA screening compared to those with low health literacy (28% vs. 16%; $p < 0.001$). Low health literacy was independently associated with decreased odds of PSA screening (adjusted OR 0.89, 95% CI 0.80–0.98, $p = 0.02$). Among the PC mortality cohort, the median BHLS score was 15 (IQR 11–15). On multivariable analysis, a BHLS score of 15 compared to 9 was associated with a 1.6-year higher adjusted median

survival (95% CI 0.2–3.0). In analyses stratified by PC stage, higher health literacy was associated with improved survival among men with advanced-stage PC (Figure).

Conclusions:

Low health literacy is associated with a reduced likelihood of PSA screening and poorer survival among men with PC, particularly in advanced stages. These findings highlight a critical need to further investigate how health literacy influences these outcomes and to develop targeted interventions for men with low health literacy.

Figure: Partial effect plots of adjusted log relative hazard of all-cause mortality over BHLS scores within each stage for patients with prostate cancer.

