Inadequate Health Numeracy Affects Cancer Screening Practices in Vulnerable Populations

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Inadequate Health Numeracy Affects Cancer Screening Practices in Vulnerable Populations

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Abstract:
Introduction: The relationship of health numeracy (HN), an element of health literacy, to cancer screening practices remains unclear. In response, this study aims to answer two questions: 1) Is HN associated with colorectal cancer screening (CRCS) and Cervical Cancer Screening (CVCs)? 2) Do these associations vary across joint categories of race/ethnicity, gender, and educational level?

Methods: This study used the Health Information National Trends Survey (HINTS 2007), a nationally representative survey of American adults (N=7264). CRCS and CVCs were dichotomous variables (1 = adherence to age-specific guidelines; 2 = non-adherence). HN was also dichotomous (1 = very easy/easy to understand medical statistics; 2 = difficult/very difficult). Contingency table methods using PASW 18.0, generated odds ratios (OR) with 95% confidence intervals (95% CI). Unweighted analyses are reported.

Results: Inadequate HN (or IHN; HN code =1) was associated with CRCS non-adherence (OR=1.13; 95% CI [1.01,1.27]). In subgroup analysis, this association persisted only among Hispanic males with less than a HS education (OR=1.48; 95% CI[1.14,1.92]). IHN was only associated with CVCs (OR=1.39 95% CI [1.20,1.60]); this association persisted only among Whites (females) with less than a HS education (OR=1.48; 95% CI 14.1, 9.2). IHN influenced CVC screening non-adherence, particularly among certain population subgroups. Ideally, these subgroups would receive interventions designed to raise HN, ultimately leading to earlier cancer detection.

Introduction:

The relationship of health numeracy (HN), an element of health literacy, to cancer screening practices remains unclear. The influences of race/ethnicity and educational level on cancer screening practices, however, are well established. Examining the joint influence of HN, race/ethnicity, and education could add valuable insights.

Research Question #1: Does the association between inadequate health numeracy (IHN) and colorectal cancer (CRC) screening non-adherence vary across joint categories of race/ethnicity and education?

Research Question #2: Does the association between IHN and cervical cancer (CVC) screening non-adherence vary across joint categories of race/ethnicity and education?

Table 1. Overall and Subgroup Age-Adjusted Odds Ratios of CRC Screening Non-Adherence, HINTS 2007.

Table 2. Overall and Subgroup Age-Adjusted Odds Ratios of CVC Screening Non-Adherence, HINTS 2007.

Conclusions: Preliminary analyses suggest that IHN influences cancer screening non-adherence, particularly among certain population subgroups. Ideally, these subgroups would receive interventions designed to raise HN, ultimately leading to earlier cancer detection.

Recommendations: Confirmatory analyses are needed, using other measures of HN available in HINTS, weighted data, and adjustment for other background variables besides age.