An Evaluation of Health Literacy in Plastic Surgery Patients

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INTRODUCTION: Health literacy encompasses a patient's literacy; comprehension and participation. [1,2] Low health literacy is associated with $106–$236 billion annually in increased hospitalizations. [3,4] Currently, there is no data on levels of health literacy in plastic surgery patients. A recent survey of ASPS members demonstrated that plastic surgeons overestimate the health literacy of their patients. [5] Our goal is to assess health literacy of patients in academic plastic surgery practice and identify patients at risk for low health literacy.

MATERIALS AND METHODS: This study was approved by our Institutional Review Board. Patients who underwent surgical repair of facial trauma, hand trauma, and breast reconstruction were included. Separate questionnaires were created for each group. Questionnaires were collected during patients' first post-operative visits. The health literacy assessment was graded by comparing patients' responses with their medical records, and a health literacy score was calculated for each patient. Logistic regression and the Student's t-Test were used for associations between demographic variables and mean health literacy scores.

RESULTS: One hundred and six patients were included. Mean health literacy scores were 1.97 ± 0.94 out of 3 for the facial trauma patients (63.3%), 2.4 ± 1.4 out of 5 for hand trauma patients (48%), and 3.76 ± 0.43 out of 4 for breast reconstruction patients (95%). In the facial trauma and hand trauma groups, patients receiving a college education or higher had significantly higher mean health literacy scores (Table 1). In the hand trauma group, a statistically significant difference was found between the mean scores of patients with Medicaid [1.75 (SD: 1.66)] and patients with private health insurance/Medicare [2.80 (SD: 1.20)] on the health literacy assessment (P=0.0358). In the breast reconstruction group, a statistically significant difference was found between the mean scores of patients with Medicaid [3.33 (SD: 0.52)] and patients with private health insurance/Medicare [3.84 (SD: 0.37)] on the health literacy assessment (P=0.0300) (Table 2).

CONCLUSION: This study demonstrates that in an academic plastic surgery setting, patients with traumatic injuries, low education level, and public insurance may be at risk for low health literacy. Identifying risk factors for low health literacy will enable future efforts to enhance the quality and efficiency of healthcare.

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LEGENDS:

Table 1. Mean Health Literacy Scores by Highest Level of Education Completed.

Study Population	Patient Subgroups	N%	Mean Score ± SD	Student t-Test p-value
Facial Trauma (N=36)	Group ≤ HS Group > HS *t*-Test p-value	63% 37%	1.41 ± 0.71 2.80 ± 0.42	1.05% – 1.78% 2.50% – 3.10% p<0.0001*
Hand Trauma (N=32)	Group ≤ HS Group > HS *t*-Test p-value	80.6 19.4	1.88 ± 1.13 4.50 ± 0.55	1.41% – 2.35% 3.92% – 5.07% p<0.0001*
Breast Reconstruction (N=38)	Group ≤ HS Group > HS *t*-Test p-value	34.5 65.5	3.70 ± 0.48 3.84 ± 0.37	3.35% – 4.05% 3.66% – 4.02% p=0.7849

*indicates significance; p-value <0.05.

Note: mean score ranges from 0 to 3 for facial trauma, 0 to 5 for hand trauma, and 0 to 4 for breast reconstruction based on performance on patient comprehension portion of questionnaire. ≤ HS: highest education completed is high school; > HS: highest education completed is higher than high school.

Table 2. Mean Health Literacy Scores by Insurance Type (Private/Medicare versus Medicaid)

Study Population	Patient Subgroups	N%	Mean Score ± SD	Student *t*-Test p-value
Facial Trauma (N=36)	Private/Medicare Medicaid	66.7 33.3	2.13 ± 0.95 1.67 ± 0.89	0.1665
Hand Trauma (N=32)	Private/Medicare Medicaid	62.5 37.5	2.80 ± 1.20 1.75 ± 1.66	0.0358*
Breast Reconstruction (N=38)	Private/Medicare Medicaid	84.2 15.8	3.84 ± 0.37 3.33 ± 0.52	0.0300*

*indicates significance; p-value <0.05.
Note: mean score ranges from 0 to 3 for facial trauma, 0 to 5 for hand trauma, and 0 to 4 for breast reconstruction based on performance on patient comprehension portion of questionnaire.