

The Impact of Education and Gender on Health Literacy and Comprehension of Health Visits in a Community Health Setting

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Introduction

Low health literacy is a significant social determinant of health that disproportionately affects vulnerable populations¹⁻². Demographic factors such as education level and gender contribute to disparities in health literacy³. Despite growing awareness of its importance, few national interventions have been implemented to improve patient health literacy at the community level⁴.

We hypothesized that lower education would be associated with reduced health literacy and lower comprehension of visit components, highlighting the need for community-based interventions.

Aims and Objectives

Aim I: Determine the health literacy status of patients who receive care at a community health center in southeastern Michigan

Aim II: Assess patient comprehension with regards to their health visits by education level and gender

Methods

- **Location**: Federally Qualified Health Clinic
- **Inclusion Criteria**: Patients 18+ years old
- **Exclusion Criteria**: Patients who do not speak or understand English fluently
- **Measurements**:
 - Aim I - BRIEF Health Literacy Screening Tool⁵, adequate vs. less than adequate health literacy
 - Aim II – short interview with patient to evaluate understanding of visit, compared to medical record
- **Statistical Analysis**: Descriptive statistics summarize demographics; Chi-square identifies differences in demographics and comprehension of clinic visit by health literacy level

Methods

BRIEF Screening Survey

- How often do you have someone help you read hospital materials?
- How often do you have problems learning about your medical condition because of difficulty understanding written information?
- How often do you have a problem understanding what is told to you about your medical condition?
- How confident are you filling out medical forms by yourself?



Interview (Excerpt)

- What brought you to the doctor today?
- What did your doctor tell you about your health?
- Did you receive any information about your blood pressure? What did your doctor say about this?
- Did you receive any information about physical activity? What did your doctor say about this?

Results

Variable	Education Comparison		Total (N=21)	P-value
	< High School/GED (N=9)	> High School (N=12)		
Health Literacy Score, n (%)				0.1194 ¹
< Adequate Health Literacy (BRIEF score 4-16)	4 (44.4%)	1 (8.3%)	5 (23.8%)	
Adequate Health Literacy (BRIEF score 17-20)	5 (55.6%)	11 (91.7%)	16 (76.2%)	
Satisfaction with information received during visit, n (%)				
Yes	9 (100.0%)	12 (100.0%)	21 (100.0%)	
Desire to get more information on topics discussed with physician, n (%)				0.6857 ¹
No	8 (88.9%)	11 (91.7%)	19 (90.5%)	
Maybe	0 (0.0%)	1 (8.3%)	1 (4.8%)	
Yes	1 (11.1%)	0 (0.0%)	1 (4.8%)	
Chief Complaints, n (%)				0.6030 ¹
Not Accurately Identified	1 (11.1%)	3 (25.0%)	4 (19.0%)	
Accurately Identified	8 (88.9%)	9 (75.0%)	17 (81.0%)	
Proportion of Existing health conditions discussed, Median (IQR)	0.4 (0.3, 0.8)	0.2 (0.0, 0.5)	0.3 (0.2, 0.5)	0.0417 ²
New Health Conditions Diagnosed, n (%)				1.0000 ¹
Not Accurately Identified	1 (11.1%)	2 (16.7%)	3 (14.3%)	
Accurately Identified	8 (88.9%)	10 (83.3%)	18 (85.7%)	
Proportion of Medications to continue to be taken, Median (IQR)	0.7 (0.5, 1.0)	0.8 (0.2, 1.0)	0.8 (0.3, 1.0)	0.5584 ²

¹Fisher Exact p-value; ²Wilcoxon rank sum p-value;

	Gender Comparison		Total (N=21)	P-value
	Male (N=9)	Female (N=12)		
Health Literacy Score, n (%)				0.6108 ¹
< Adequate Health Literacy (BRIEF score 4-16)	3 (33.3%)	2 (16.7%)	5 (23.8%)	
Adequate Health Literacy (BRIEF score 17-20)	6 (66.7%)	10 (83.3%)	16 (76.2%)	
Satisfaction with information received during visit, n (%)				
Yes	9 (100.0%)	12 (100.0%)	21 (100.0%)	
Desire to get more information on topics discussed with physician, n (%)				0.1714 ¹
No	7 (77.8%)	12 (100.0%)	19 (90.5%)	
Maybe	1 (11.1%)	0 (0.0%)	1 (4.8%)	
Yes	1 (11.1%)	0 (0.0%)	1 (4.8%)	
Chief Complaints, n (%)				0.6030 ¹
Not Accurately Identified	1 (11.1%)	3 (25.0%)	4 (19.0%)	
Accurately Identified	8 (88.9%)	9 (75.0%)	17 (81.0%)	
Proportion of Existing health conditions discussed, Median (IQR)	0.4 (0.2, 0.5)	0.3 (0.1, 0.5)	0.3 (0.2, 0.5)	0.6682 ²
New Health Conditions Diagnosed, n (%)				0.2286 ¹
Not Accurately Identified	0 (0.0%)	3 (25.0%)	3 (14.3%)	
Accurately Identified	9 (100.0%)	9 (75.0%)	18 (85.7%)	
Proportion of Medications to continue to be taken, Median (IQR)	0.8 (0.3, 1.0)	0.8 (0.4, 0.9)	0.8 (0.3, 1.0)	0.6630 ²

¹Fisher Exact p-value; ²Wilcoxon rank sum p-value;

Conclusions

- This study highlights that while most patients in this community health setting had adequate health literacy and were satisfied with provider communication, disparities may still exist based on education level. Although not statistically significant, individuals with lower educational attainment were less likely to have adequate health literacy. Interestingly, they also discussed a greater proportion of their existing health conditions, potentially reflecting either provider emphasis or patient engagement strategies.
- No major differences were observed in comprehension by gender. The findings underscore the importance of tailoring communication strategies to individual patient needs, particularly in underserved populations. Community-focused interventions to support health literacy, especially among patients with lower educational backgrounds, remain a critical area for development to improve patient understanding and health outcomes.

Limitations for this study include:

- Sample size
- Single clinic
- Geographic location
- Variability in robust qualitative data
- Exclusion Criteria

References

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Acknowledgements

We thank Dr. Marisa Abbo DO, MSW, MSeD, FAAFP, the staff, and most of all the patients at Covenant Community Care Clinic in Royal Oak, MI for their significant contributions to this study.

IRB Approval: 2022-192, Expedited Category 5 & 7