Implementation of Virtual Health Literacy Disparities Intervention to Assess Awareness Among Undergraduate Volunteers at a Student-Run Clinic

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BACKGROUND

Public health has promoted health literacy as an asset for directing attention to social and environmental factors that empower individuals to have greater control over their health [6]. Low health literacy affects nearly 87% of American adults [5] however, there have been few studies to date that have explored health literacy awareness as an essential component to patient care among pre-health undergraduate students.

- **This study aims to evaluate the effect of implementing a novel, comprehensive online training on health literacy disparities for undergraduate volunteers at the IU-SOC student-run free clinic.**

METHODS

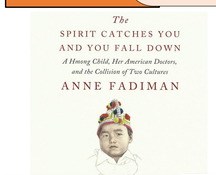
- IU-SOC new and veteran front desk volunteers (FDV) recruited (n = 34) with IU IRB approval
- Completed required 2.5-hour online Canvas educational module
  - 3-Part Intervention included: pre-recorded lectures, educational videos, open forum discussions, and interactive activities
- Pre-intervention survey and Post-Intervention survey collected through IU Qualtrics
  - Surveys included: literature-based knowledge assessment [1], confidence and perception [1] Likert scales, and open-ended questions.
- Paired t-tests and ANOVA used to compare mean knowledge assessment and Likert scale scores; Thematic analysis used for open-ended responses

Understanding Health Literacy

- Identifying common red flags of low health literacy
- Translating complex medical terms into plain English [2]

Social Factors of Health Literacy

- Socioeconomic, Educational, & Racial Disparities
- Discussion: Applying disparities to IU-SOC Patient Demographic & COVID-19 Pandemic



Cultural Barriers of Health Literacy

- Understanding cultural components of health care
- Case Study: *The Spirit Catches You and You Fall Down* excerpt examining Hmong culture & Western medicine [3]

Health Communication Barriers

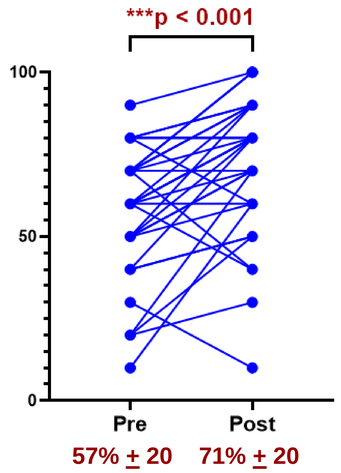
- Evaluated patient-provider through discussion of sample Patient Discharge video
- Evaluated efficacy of COVID-19 public health messaging

Closing the Health Literacy Gap

- Evaluating patient screening tools
- Strategies to improve patient communication (ex. teach-back method) addressing Continuum of Confusion [4]

QUANTITATIVE RESULTS

Figure 1. Knowledge Assessment % Correct (n = 34)



Demographics (n=34)	n(%)
Gender	
Female	25 (74%)
Male	8 (24%)
Non-binary	1 (3%)
Ethnicity	
Asian	14 (41%)
Black/African American	4 (12%)
White	13 (38%)
Other	3 (9%)
Volunteer Experience	
Have not started	18 (53%)
1 semester	7 (21%)
2 semesters	4 (12%)
3+ semesters	5 (15%)
Major	
Science	29 (85%)
Non-Science	5 (15%)
Had Previous Workshop Experience	11 (32%)

TABLE 1. SCALE MEASURES

Scale Measures	Pre	Post
Perceptions of Patient Communication Importance Scale[a] (range 15-30, higher score = more important)	**25.2 ± 3.7**	**27.6 ± 3.5*** **
How important for patient care is it for you as a volunteer to translate medical information into nonmedical terms?	4.4 ± 0.7	4.7 ± 0.6
How important for patient satisfaction is it for you as a volunteer to translate medical information to nonmedical terms?	4.4 ± 0.8	4.7 ± 0.6
How important is it for patient care is it to introduce by name and role all team members present at the registration desk?	3.9 ± 1.1	4.6 ± 0.8
How important is it to ask patients "What questions do you have?"	4.5 ± 0.7	4.8 ± 0.6
How important is it for volunteers to ask the IU-SOC nursing partners for updates about a patient's wait status?	4.2 ± 0.7	4.5 ± 0.7
How confident are you in your ability to translate medical information into nonmedical terms?	3.9 ±0.8	4.3 ± 0.7
Confidence in Health Literacy Knowledge Scale[b] (range 3-15, higher score = more confident)	**10.3 ± 2.9**	**13.5 ± 2.4*** **
Awareness of Health Literacy	3.5 ± 1.1	4.5 ± 0.8
Understanding of Health Literacy	3.3 ± 1.1	4.5 ± 0.8
Ability to Recognize Health Literacy Factors	3.4 ± 1.0	4.5 ± 0.8

[a]Cronbach's Alpha: 0.850 (pre), 0.924 (post) [b]Cronbach's Alpha: 0.924 (pre), 0.974 (post) ***p<0.001

TABLE 2. THEMES IN HEALTH LITERACY DISPARITY KNOWLEDGE

Themes	Quotes
Disparities	"Especially when working in underserved communities, I had to learn that not all people have received the same type of education that I have… as someone who wants to work in the healthcare field one day, of course I am more familiar with various medical terms"
Component: Language Barrier	"When shadowing, I witnessed some individuals who did not speak English very well ask no or very few questions when regarding some complex procedures."
Component: Provider Role	"Now that I feel like I am more fully informed about health literacy I have come to understand more clearly that it is not the sole responsibility of the patient to understand but also that of the physician to clarify and make sure they are being understood."
COVID	"Many people have an incomplete understanding of how the virus works, the forms which it can spread, or the dangers it poses. People may wait too long to seek treatment, or struggle to comply with mask-wearing suggestions. The virus has disproportionately affected low income communities of color which is likely in part due to issues in health literacy."

Figure 2. Word Cloud of Participants' Answers to ***"In your own words, based on your knowledge and experience, how would you define health literacy?"*** **(Post-Survey)**

CONCLUSIONS

This intervention significantly improved social awareness of health literacy and health literacy disparities among IU-SOC undergraduate volunteers

Future Steps

Further development of training based on curriculum feedback → Follow-up after clinic re-opening to measure retention and application of intervention to active clinic settings

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