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Income and Its Effects On Health Literacy: A Study Between a Student-Run Free Clinic and a Family Medicine Office

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Income and Its Effects On Health Literacy: A study between a Student-Run Free Clinic & a Family Medicine Office

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Background

- Health literacy is defined as the understanding and application of words, numbers & documents (ie: medication labels, medical forms)¹
- More than 1/3 of people nationwide (80+ million) have limited health literacy which contributes to poor health outcomes and lifestyle choices.^{1, 2}
- The Newest Vital Sign (NVS) assessment is a validated short survey that is conducive to assess health literacy in primary care settings.³
- Rowan Community Health Center (RCHC) is a student-run clinic in Lindenwold, NJ that provides cost-free primary care services regardless of income, insurance, or legal status
- Aim:
RCHC utilized the NVS assessment to assess if there is a difference in health literacy between non-insured patients at RCHC compared to insured patients at Rowan Family Medicine (FM) office in Hammonton, NJ

Methods

- IRB-approved study with 45 patients enrolled at RCHC (n=18) and Rowan Family Medicine office (n=27)
- Informed consent and demographic information obtained prior to NVS assessment
 - demographics = primary language, insurance status, highest education level, income poverty status (fig 1)
- Data stored in Qualtrics and analyzed with Fisher's exact test in SPSS

2021 Guidelines

household size	income
1	\$12,880
2	\$17,420
3	\$21,960
4	\$26,500
5	\$31,040
6	\$35,580
7	\$40,120
8	\$44,660

*Families of 8 persons, add \$4,480 for each person

fig 1: poverty status

Nutrition Facts	
Serving Size	1/2 cup
Servings per container	4
Amount per serving	
Calories	250
	Fat Cal 120
<hr/>	
Total Fat	13g 26%
Sat. Fat	9g 40%
Cholesterol	28mg 12%
Sodium	50mg 2%
Total Carbohydrate	30g 12%
Dietary Fiber	2g
Sugars	23g
Protein	4g 8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.
Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolk, Brown Sugar, Milk, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Results

- Significantly higher prevalence of limited literacy (score ≤ 3) compared to adequate literacy (score ≥ 4) among male patients ($p=0.046$) and patients below the poverty line ($p=0.036$)
- No significant difference between literacy (score ≤ 3) and adequate literacy (score ≥ 4) based on:
 - RCHC vs. FM office ($p=0.75$), Insurance status ($p=0.23$), primary language spoken ($p=0.295$), Education level ($p=0.27$)

READ TO SUBJECT:
This information is on the back of a container of a pint of ice cream.

1. If you eat the entire container, how many calories will you eat?
Answer: 1,000 is the only correct answer.

2. If you are allowed to eat 40 grams of carbohydrates as a snack, how much ice cream could you have?
Answer: Any of the following is correct: 1 cup for any amount up to 2 cups. Half the container. Note: If patient answers "two servings," ask "How much ice cream would that be if you were to measure it into a bowl?"

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 4g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?
Answer: 33 is the only correct answer.

4. If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?
Answer: 10% is the only correct answer.

READ TO SUBJECT:
Pretend that you are allergic to the following substances: penicillin, peanuts, latex, dimes, and blue stripes.

5. Is it safe for you to eat this ice cream?
Answer: No

6. Ask only if the patient responds "no" to question 5: Why not?
Answer: Because it has peanuts!

Number of correct answers: _____

ANSWER CORRECT?	yes		no	
	yes	no	yes	no
1				
2				
3				
4				
5				
6				

Interpretation
Score of 0-1 suggests high likelihood (50% or more) of limited literacy. Score of 2-3 indicates the possibility of limited literacy. Score of 4-4 almost always indicates adequate literacy.

fig 2: NVS assessment tool

*if pt answered Q1-4 correct, stop survey due to almost certainty of adequate literacy
*if pt answered Q5 incorrect, do not ask Q6

score	RCHC	FM	total
0-1	9	6	15
2-3	4	12	16
4-6	5	9	14

fig 3: NVS scores in patient population

Conclusion

- Gender and socioeconomic factors played a role in health literacy in our patient populations
- While we expected a difference in literacy between insured and uninsured patients, literacy is a universal problem
 - Adequate literacy should not be assumed by physicians
 - Using short and simple education material and graphics can help improve literacy and treatment adherence¹
- Limitations: sample size, no immediate interventions for limited literacy
- Next steps: RCHC is hoping to create a literacy course as a potential intervention for basic health literacy

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