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A Pilot Study for Enhancing Postpartum Discharge Instructions for Incision Care: Assessment of Comprehension

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Introduction

❖ Literacy and Health Care

- 14.5% of United States is illiterate¹
- Reading level of most medical forms is 10th grade²

❖ Improving Outcomes with a Visual Aid

- Cesarean Surgical Site Infection (SSI) rate is 5%³
- A patient with a SSI can be 2 times as expensive⁴
- Visual aids improve information recall⁸ and confidence in wound care⁵

❖ Study Objectives

1. To evaluate the readability of the cesarean wound care discharge instructions relative to the patient population's reading level
2. To conduct a pilot Randomized Control Trial (RCT) to evaluate the effectiveness of a visual aid on improving comprehension of the cesarean wound care instructions

Methods

❖ Objective 1:

Discharge Instruction Evaluation

3 readability assessments:

- Flesch-Kincaid Grade Level Test
- SMOG Readability Test
- Fry Readability Test

Patient Reading Level Test: REALM

REALM Health Literacy Test (Rapid Estimate of Adult Literacy in Medicine)
How many of these words can you read aloud and pronounce correctly, each within five seconds? Start with the first column, reading down. Skip those you cannot read.

Correct Words	Reading Grade Level
0-18 words	≤3 rd Grade
19-44 words	4 th – 6 th Grade
45-60 words	7 th – 8 th Grade
61-66 words	High School

REALM Scoring Guide

Fat	Fatigue	Allergic
Flu	Pelvic	Menstrual
Pill	Jaundice	Tasticle
Dose	Infection	Colitis
Eye	Exercise	Emergency
Stress	Behavior	Medication
Smear	Prescription	Occupation
Nerves	Noxify	Sexually
Germes	Gallbladder	Alcoholism
Meals	Calories	Irritation
Disease	Depression	Constipation
Cancer	Miscarriage	Gonorrhea
Caffeine	Pregnancy	Inflammatory
Attack	Arthritis	Diabetes
Kidney	Nutrition	Hepatitis
Hormones	Menopause	Antibiotics
Herpes	Appendix	Diagnosis
Seizure	Abnormal	Potassium
Bowel	Syphilis	Anemia
Asthma	Hemorrhoids	Obesity
Rectal	Nausea	Osteoporosis
Incest	Directed	Impetigo

❖ Objective 2: RCT conducted on the postpartum floor of Thomas Jefferson University Hospital (TJUH)

- Participants: postpartum cesarean patients ages 18-50 (excluded patients who were non-native English speakers)
- Randomized to receive the current written discharge instructions with (intervention) or without (control) a corresponding visual aid (Figure 1)
- Study Procedures:

- Review discharge instructions
- Standard teach back
- Comprehension quiz
- REALM
- Demographic survey
- 2 Week follow up comprehension quiz
- Visual aid offered to controls

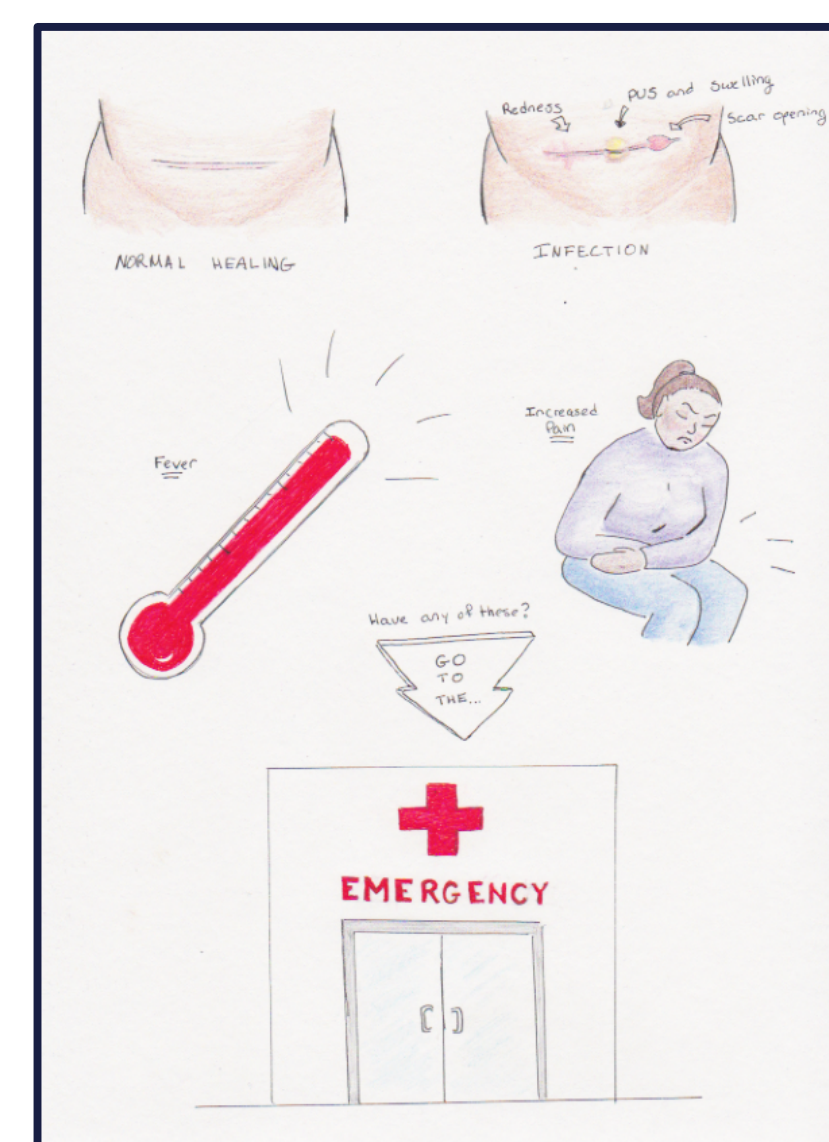


Figure 1: Visual Aid: Illustrates signs of a SSI and Emergency Room to emphasize severity of SSI

Results

❖ Readability Assessments

Discharge Instruction Readability Evaluation

Flesch-Kincaid	→	6.4	} 8.6 th Grade
SMOG	→	11	
Fry	→	8.3	

Participant Reading Level Evaluation

- REALM: **18% (6/32)** of participants read at a 7-8th grade level
- Demographic Survey: **44% (14/32)** ≤ High School

❖ Visual Aid RCT – Preliminary Results

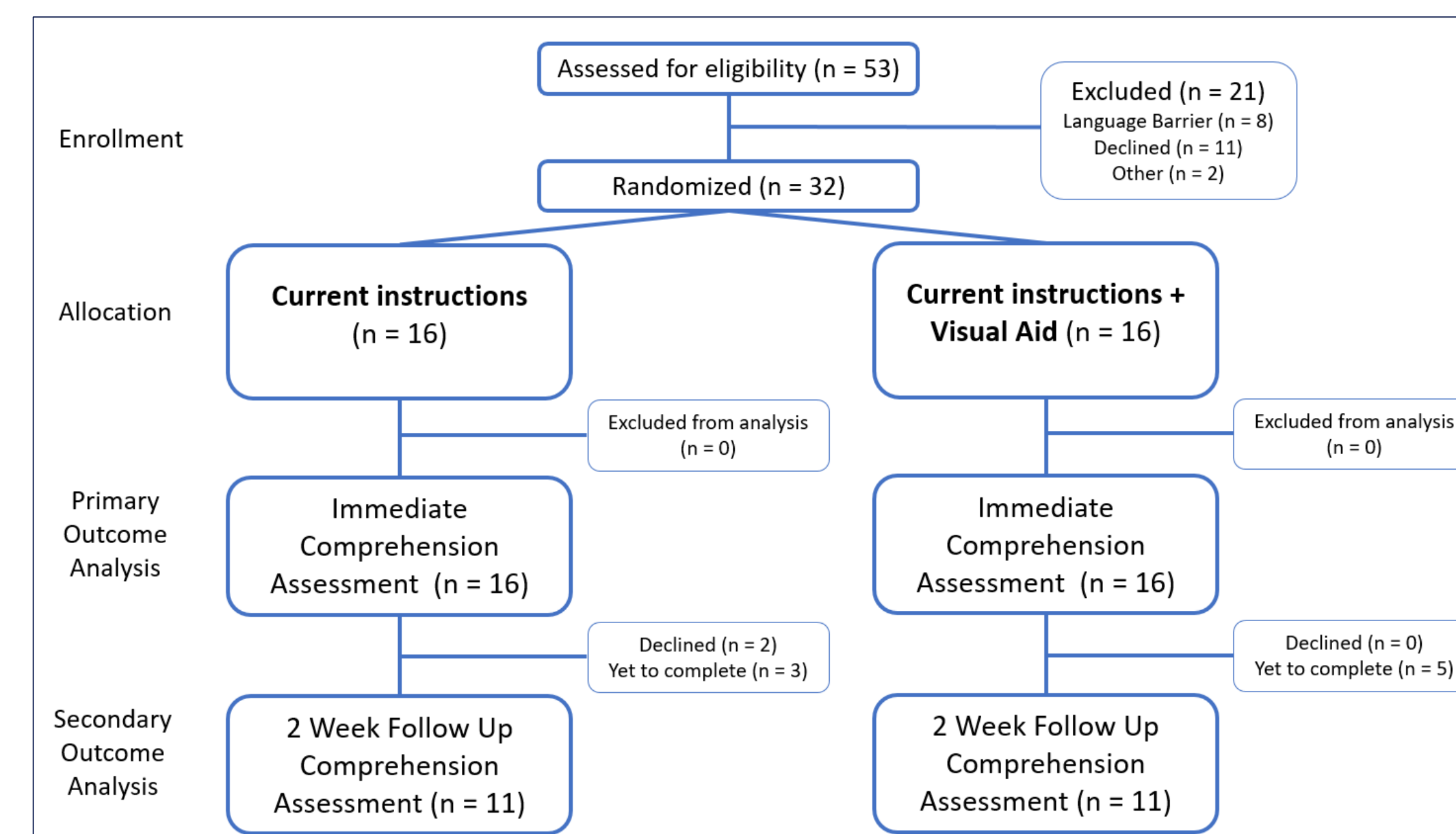


Figure 2 - CONSORT Diagram

Characteristic	Standard Instructions Only Group (n = 16)	Standard Instructions Plus Visual Aid Group (n = 16)	p value*
Marital Status n (%)			0.723
Not Married	9 (52.9)	8 (47.1)	
Married	7 (46.7)	8 (53.3)	
Race/Ethnicity, n (%)			0.494
White	6 (60.0)	4 (40.0)	
Black	8 (50.0)	8 (50.0)	
Hispanic/Latino	2 (50.0)	2 (50.0)	
Other	0	2 (100.0)	
Education, n (%)			0.319
≤12 th Grade	6 (42.9)	8 (57.1)	
Some College/Associate's	2 (33.3)	4 (66.7)	
≥Bachelor's Degree	8 (66.7)	4 (33.3)	

Table 1 –Participant Characteristics. Parity, prior abdominal surgery, and BMI also did not differ between study groups.

	Immediate Comprehension (Answered Correctly)			Delayed Comprehension (Answered Correctly)		
	Current N=16	Current + Visual N=16	p value*	Current N=11	Current + Visual N=11	p value*
Mean Total Score N (SD)	8.4 (2.0)	8.3 (1.7)	0.777	9.9 (0.9)	9.3 (1.9)	0.336
Answered at least 90% correctly N (%)	5 (31.3)	5 (31.3)	1.000	6 (54.5)	5 (45.5)	0.670

Table 2 –Comprehension Quiz Results

Other Results

- Married participants were **23.2** times more likely to score ≥90% in either comprehension assessment.
- **64% (7/11)** controls requested to have the visual aid upon study completion

Conclusions

❖ Readability Assessment: The written instruction reading grade level is too high.

- Currently ≈8-9th grade while 18% of participants read at 7-8th grade
- 15% of patients evaluated for participation were excluded due to language barriers, suggesting that a higher percentage reads below the ≈8-9th grade level

❖ Visual Aid RCT: The visual aid did not affect comprehension.

- There is a need for improved patient education (majority unable to score ≥90%)
- Marriage was the only characteristic associated with better scores
- Visual aid may improve patient satisfaction
- Limitations:

- Exclusion of non-native English speakers
- Participation bias
- Knowledge of a comprehension assessment
- Multiple choice format of comprehension assessment

• Future studies:

- Include non-native English speakers
- Free response format of comprehension questions
- Formally assess patient satisfaction

Public Health Implications

❖ There is a need for improved cesarean wound care education.

❖ Based on the REALM results, of the English speaking cesarean patients at TJUH, 18% read at a 7-8th grade reading level.

❖ Information in medical charts and perceptions of care providers regarding a patient's language may be misleading.

❖ Incorporating a visual aid into the discharge education process may improve patient satisfaction and can be feasibly included.

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