HIV Treatment Adherence Counseling Intervention for People Living with HIV and Limited Health Literacy

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HEALTH LITERACY

Institute of Medicine:

"the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."

Limited health literacy is associated with…

Poorer Type 2 diabetes glycemic control and higher rates of retinopathy. (Schillinger, 2002)

Higher mortality rates within a managed care setting. (Baker et al 2007)

Poorer understanding of medical labels/instructions, and greater likelihood of taking medicines incorrectly. (Bennett et al., 2009; Soroui et al., 2008)

Health Literacy and Adherence to Antiretroviral Therapies

Literacy and HIV Health Status

	Lower Literacy	Higher Literacy
CD4 < 300	74%	55% *
Prescribed ART	59%	73% *
Undetectable Viral Load	8%	36% *

*p<.05

Kalichman et al., 2000

Literacy and ART Adherence

	Lower Literacy	Higher Literacy
> 75% Adherent	69%	82%*
> 90% Adherent	55%	70%*

*p<.05

Kalichman et al., 2002

Stick-To-It

Individualized
ART Adherence Counseling
for Low-Literacy Adults Living with HIV

Stick-To-It
2-60 min. Sessions +
1 30-min booster
Pictographic Flip-Chart
Personalized Feedback
Custom Adherence Plan

Doak et al.'s (1996) Principles

Set Realistic Objectives

Limit to the targeted goals
Use a planning sheet

Focus on Behaviors/ Skills

Emphasize skills
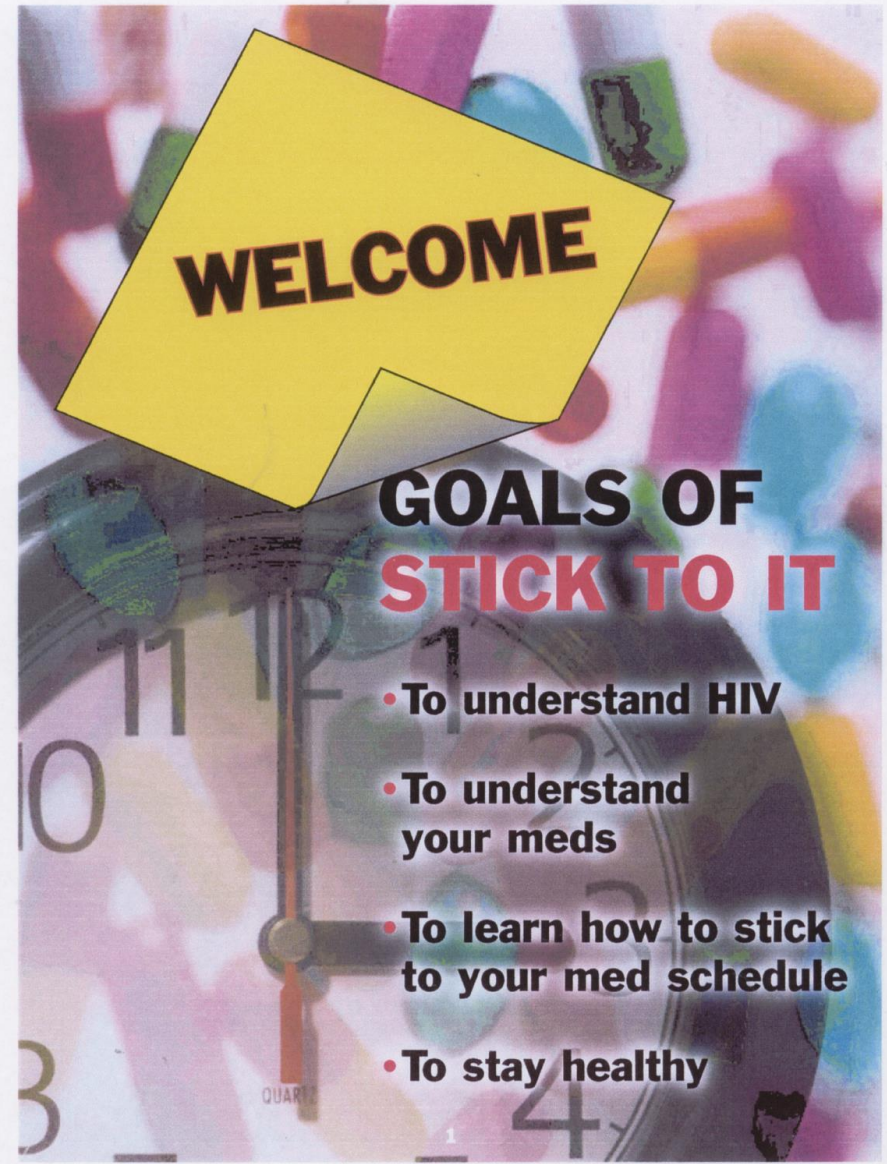Enhance motivation

Present Context Before
new Information

State the purpose
Relate to the person's life

Partition Complex
Instructions
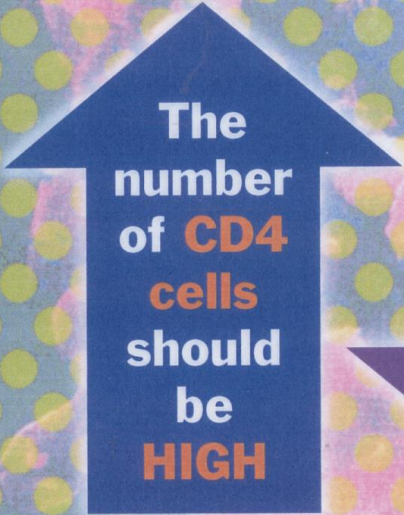
Break information up
Create opportunities for
success

Use Interactive Instructions

Demonstrate, practice,
problem solve

STICK TO IT

WELCOME

GOALS OF
STICK TO IT

- To understand HIV

- To understand your meds

- To learn how to stick to your med schedule

- To stay healthy

THE BEST NUMBERS...

When you take HIV meds, these are the best numbers to have:

The number of CD4 cells should be HIGH

The viral load number should be LOW

These numbers show what HIV is doing in your body.

TAKING MEDS IN YOUR DAILY LIFE

Let's talk about your day...

When you wake up
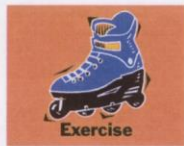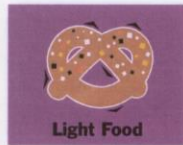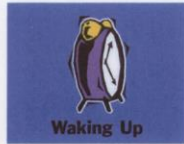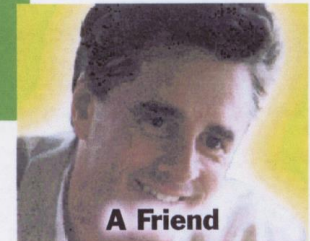
When you eat

Your free time

When you go to bed

THE MEDS YOU TAKE AND WHEN YOU TAKE THEM

42

DEALING WITH YOUR SIDE EFFECTS

Do your meds...

Make you sick to your stomach?

Make you tired?

Make you hurt?

Make you stay up (not sleep)?

YOUR MEDS ACTION PLAN

Waking Up

Set Alarm

Water

Food

Light Food

No Food

Exercise

Bedtime

Going Out

TV Time

TOOLS TO HELP YOU TO REMEMBER TO TAKE YOUR MEDS

Alarm Clock

Carrying Meds

Watch Alarm

8 p.m. Take meds!

Notes

A Friend

Pill Boxes
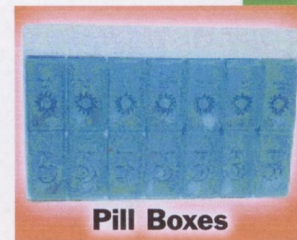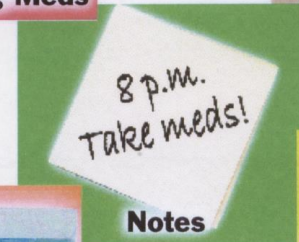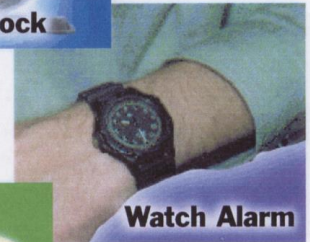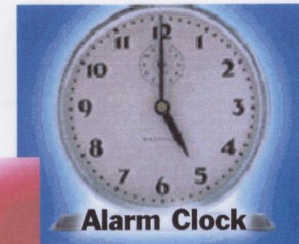
Your Viral Load (Log)

	0	.5	1.0	1.5	2.0	2.5	3.0	3.5+
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Your CD4 T-Cell Count

	0	100	200	300	400	500	600	700+
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Important Phone Numbers

Primary Doctor

_____

Other Doctor(s)

_____

_____

Pharmacy

_____

Social Worker/Case Manager

_____

Other

_____

_____
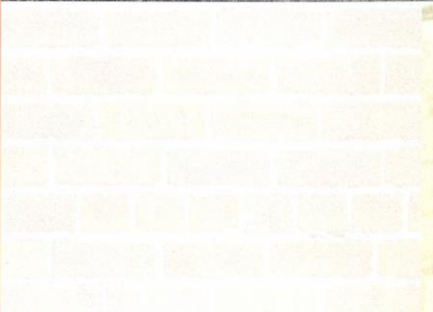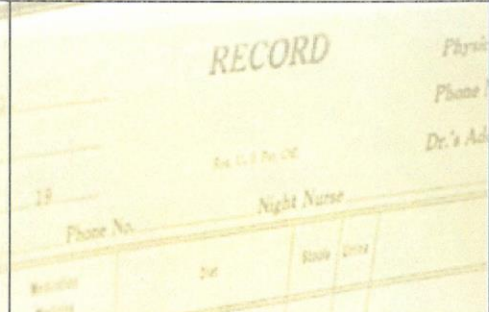
Emergency Contact(s)

_____

_____

_____

_____

STICK TO IT

Now Let's Talk About Your Meds...

Time to Take			Drug	Remember To...	Watch This

Things That Block You	Your Action Plan	People to Help You	Always...
	RECORD Physi... Phone Dr.'s Ad... 19 Night Nurse Phone No.		• Take your medications every time • Keep your doctor appointments • Eat healthy • Use reminders • **STICK TO IT!**

Comparison Interventions

**Standard (Untailored)
Adherence Counseling**

**General Health Improvement Skills
(Not ART Adherence)
Nutrition and Stress Reduction**

Contacted Research Site
N = 1385

>90% Correct TOFHLA   N = 417
Not Taking ART N = 374
Not HIV+ = 120

< 90% Correct on TOFHLA & Taking ART
Attended Intake Session N = 474

Did not return for baseline assessment N=28

Baseline ACASI, Viral Load
Randomized N= 446

Pictograph Guided
N = 148

Standard Adherence
N = 157

Health Improvement
N = 141
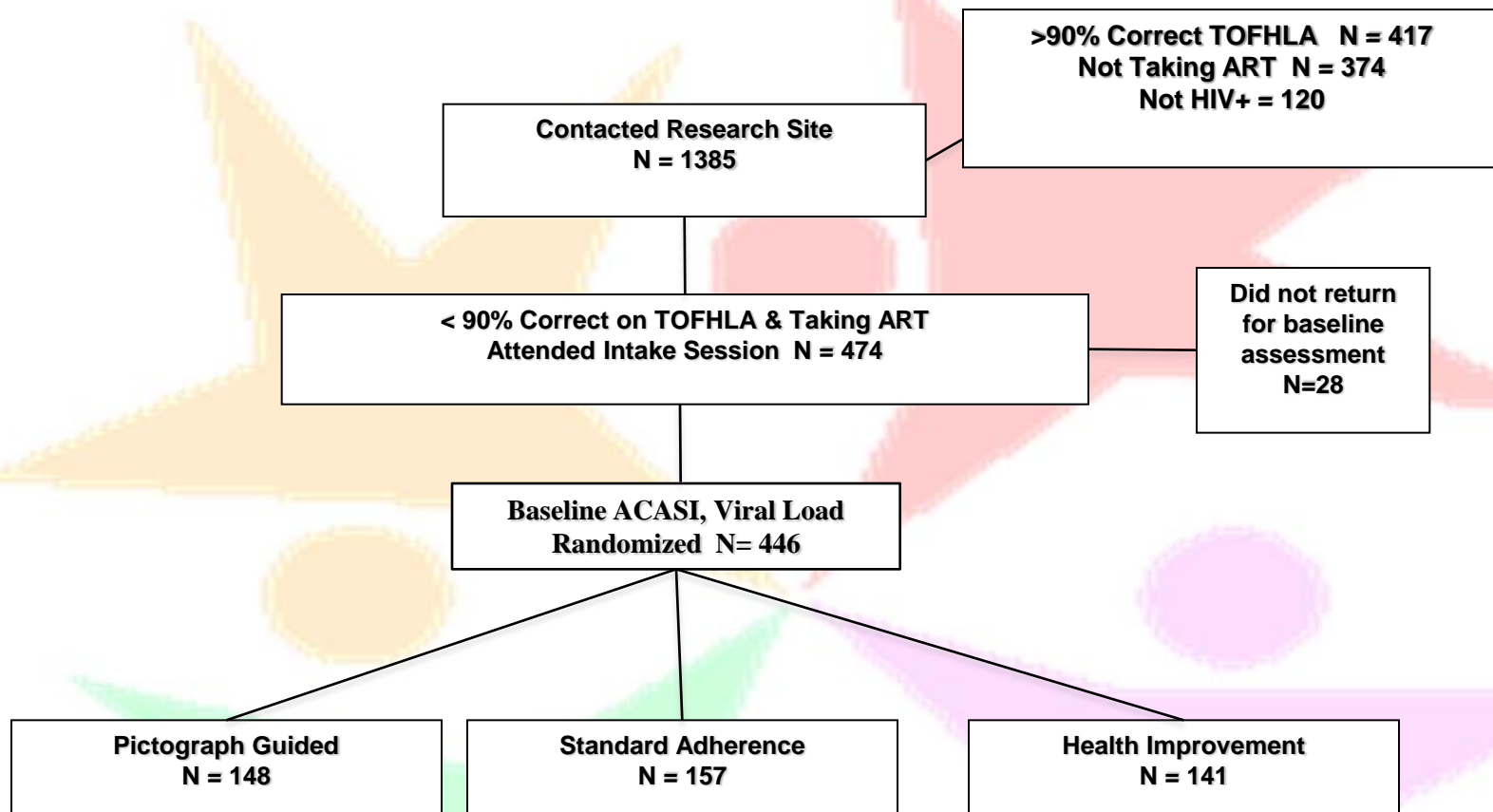
** Entry Criteria: HIV+ treated with ART, 18 or older, TOFHLA
Score < 90% correct
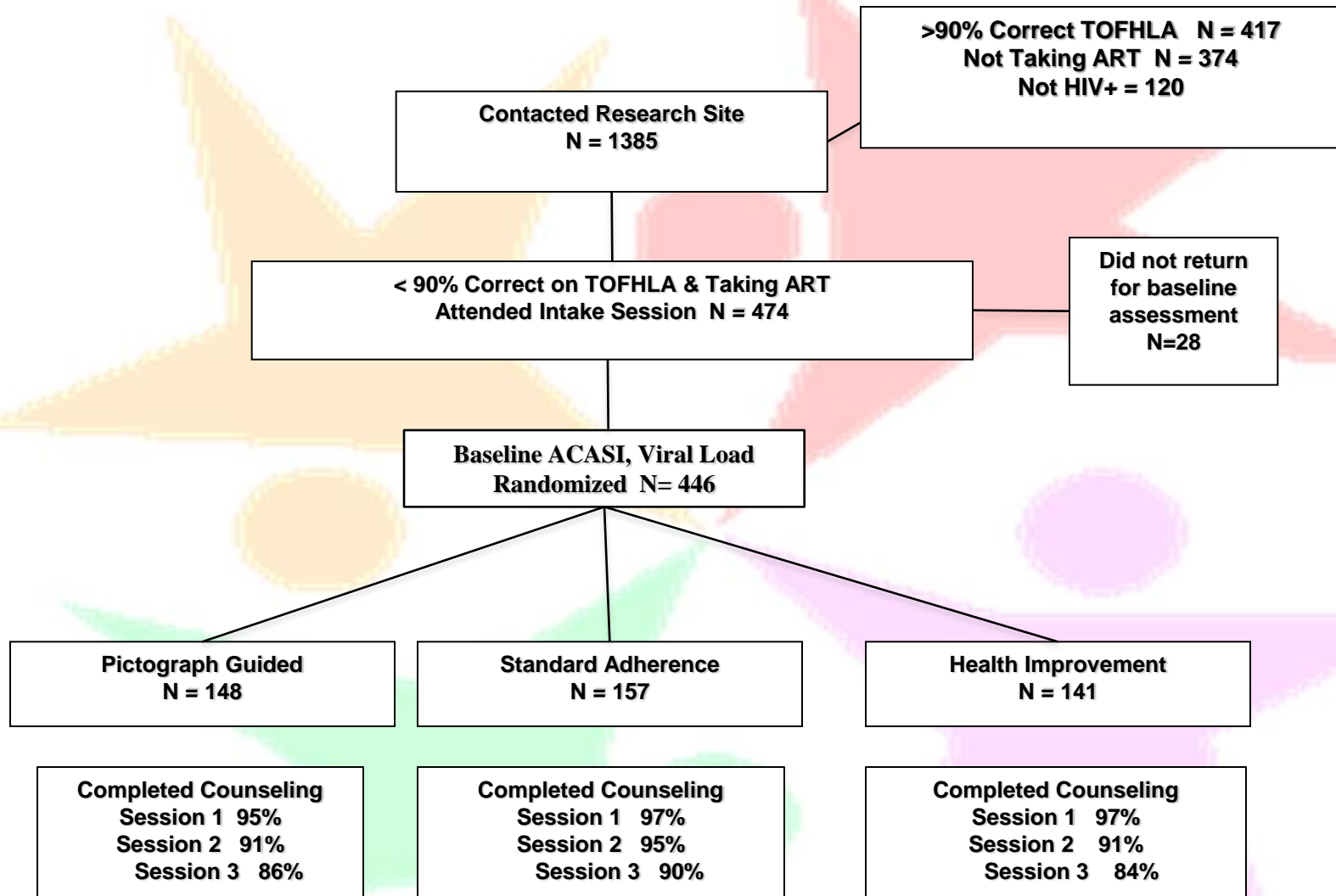
Follow-up for 9-months post-counseling was > 85% for all conditions & all assessments
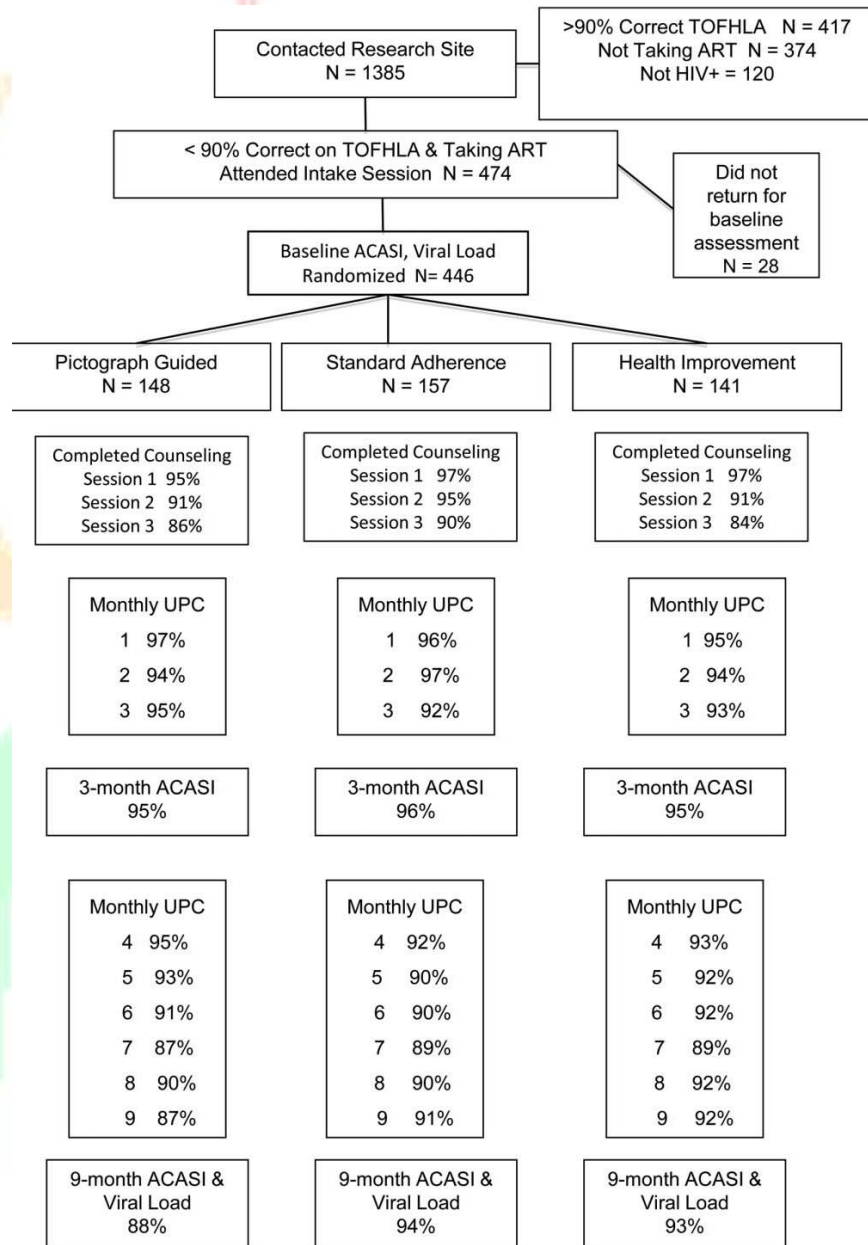
Characteristics of clinical trial participants.

| Characteristic	Pictograph Guided (N = 148)		Standard Adherence (N = 157)		General Health Improvement (N = 141)	
	M	SD	M	SD	M	SD
Age	46.7	7.3	47.0	8.4	47.8	8.3
Years of education	12.0	1.7	12.0	1.8	11.9	1.8
Years since testing HIV+	14.0	7.4	13.6	7.3	13.0	6.6
HIV symptoms	5.1	3.1	5.0	3.1	4.9	3.0
CD4 cell count	411	313.2	404	250.2	437	288.9
% Correct reading literacy	72.2	22.9	73.9	20.8	72.4	21.4
% Correct numeracy literacy	64.1	25.4	67.7	27.3	64.3	26.2
	N	%	N	%	N	%
Men	104	70	115	73	91	65
Women	44	30	42	27	50	36
African-American	137	93	152	97	132	94
Currently unemployed	42	28	50	32	38	27
TOFLA < 85% correct	86	58	84	53	57	40
CD4 count < 200 cell/cc	39	26	39	25	30	21

Literacy Groups X Condition

TOFHLA Score (Correct)	Pictographic Adherence	Standard Adherence	General Health
85-90%	62	73	84
< 85%	86	84	57

Primary Outcomes

ART Adherence via unannounced pill counts & HIV RNA (Viral Load)
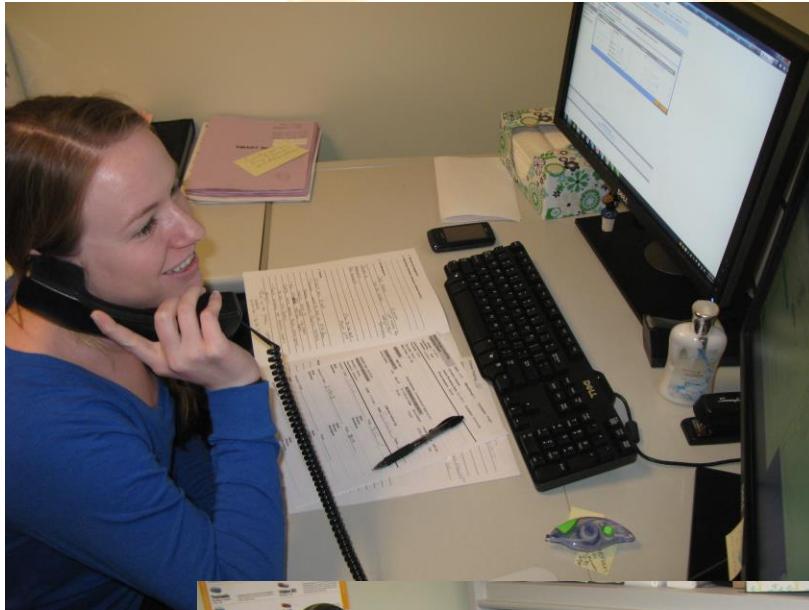
Outcome Analyses

GEE Models controlling for baseline

Adherence
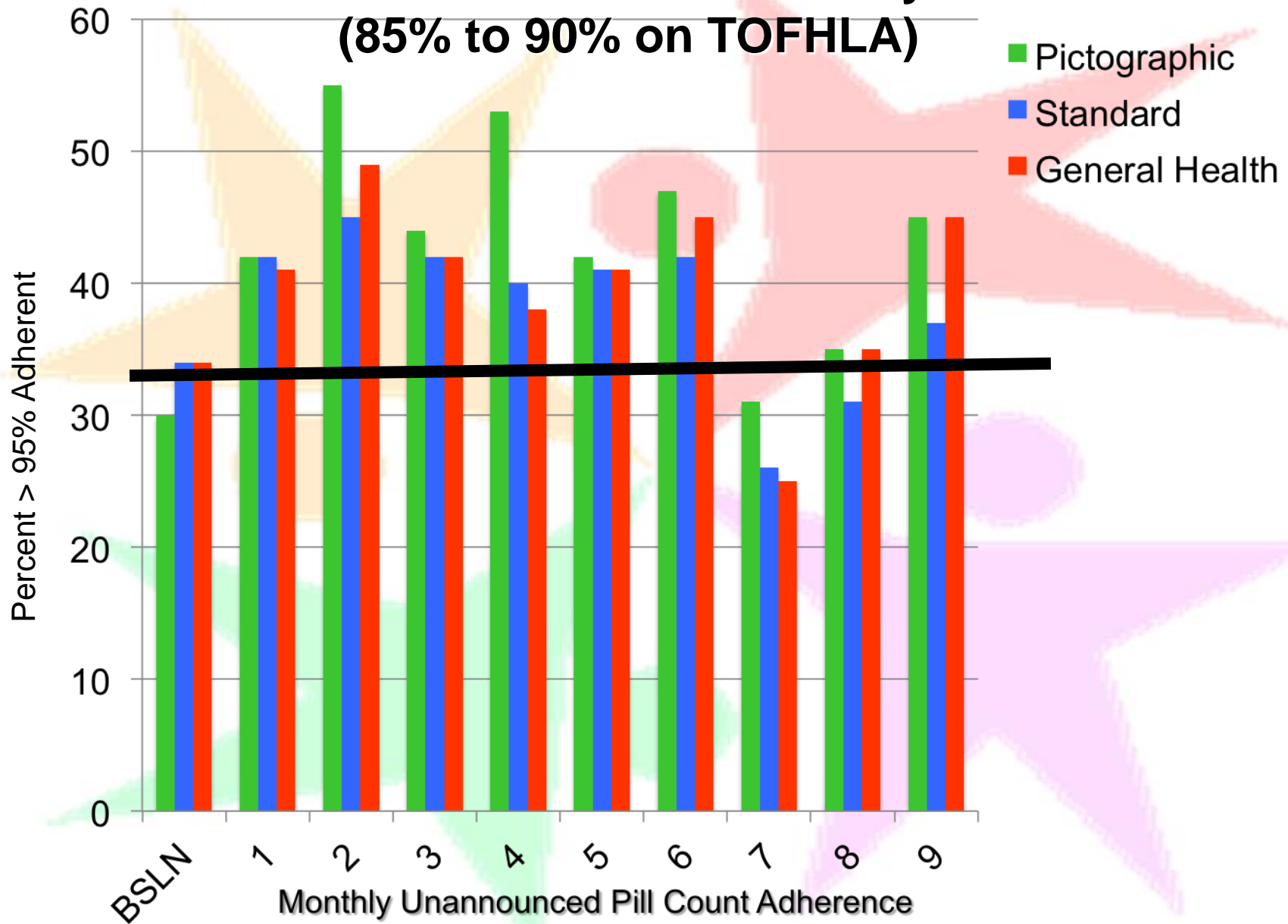3 (Condition) X 2 (Literacy Groups) X 9 (Unannounced Pill Counts)

Viral load
3 (Condition) X 2 (Literacy Groups)

Adherence Outcomes

Intervention condition
X literacy group interaction

Pictographic and Standard counseling improved ART adherence for people with moderate literacy, but not lower-literacy

Moderate Health Literacy (85% to 90% on TOFHLA)

Legend: Pictographic (green), Standard (blue), General Health (red)

Y-axis: Percent > 95% Adherent

X-axis: Monthly Unannounced Pill Count Adherence (BSLN, 1, 2, 3, 4, 5, 6, 7, 8, 9)

GEE Model Condition X Literacy Group Interaction, Wald X^2 = 5.93, p < .05

Lower Health Literacy
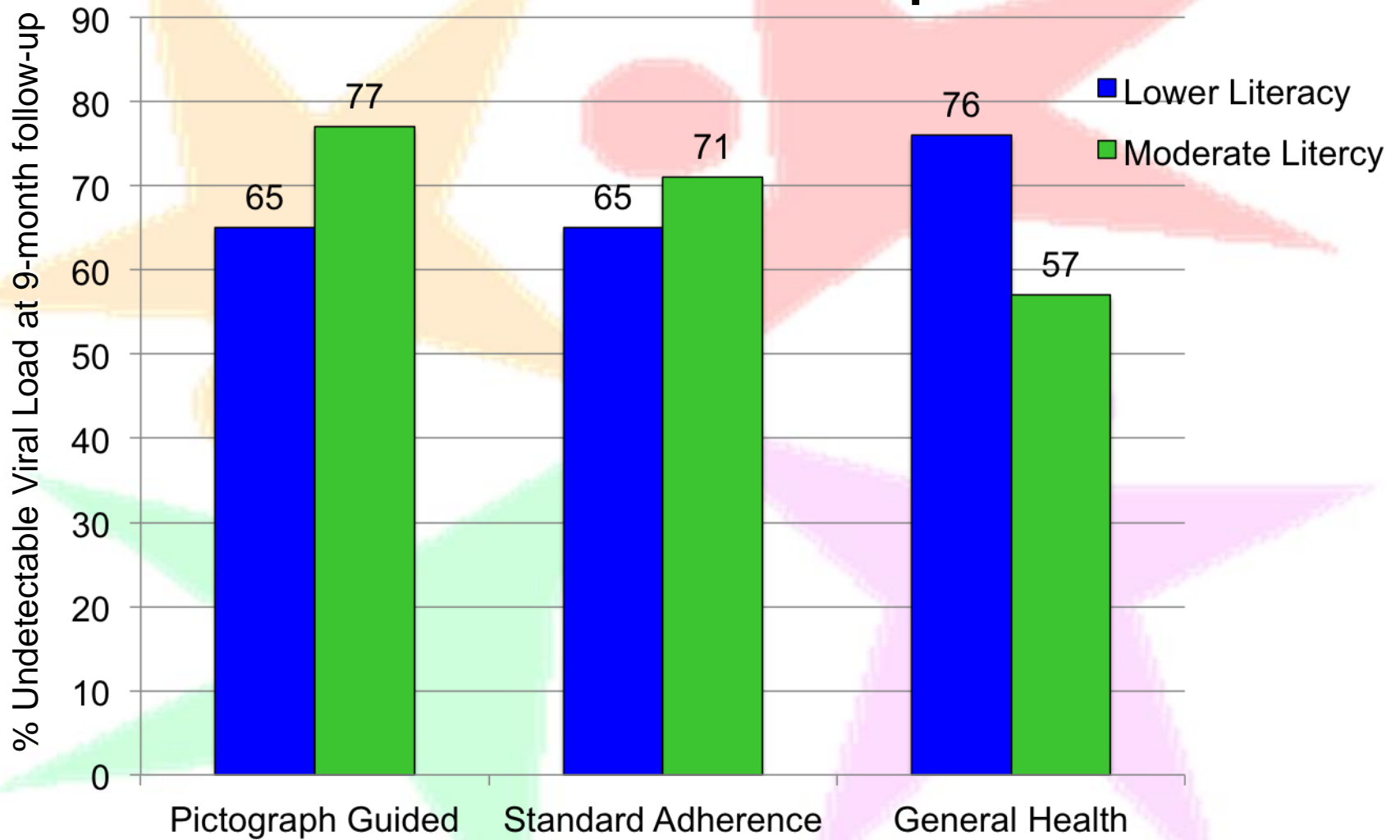(< 85% on TOFHLA)
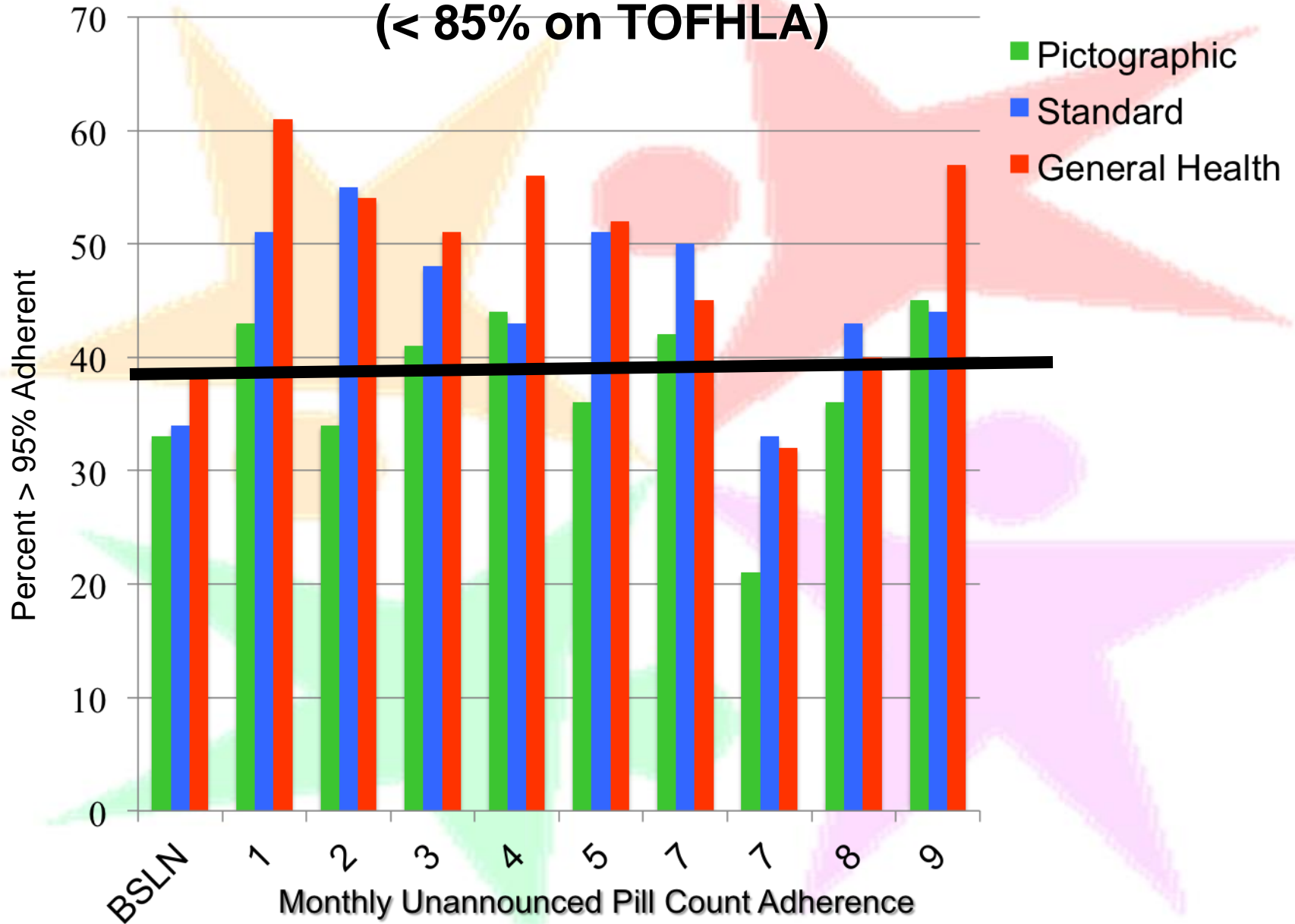
Percent Undetectable
Viral Load at Follow-up
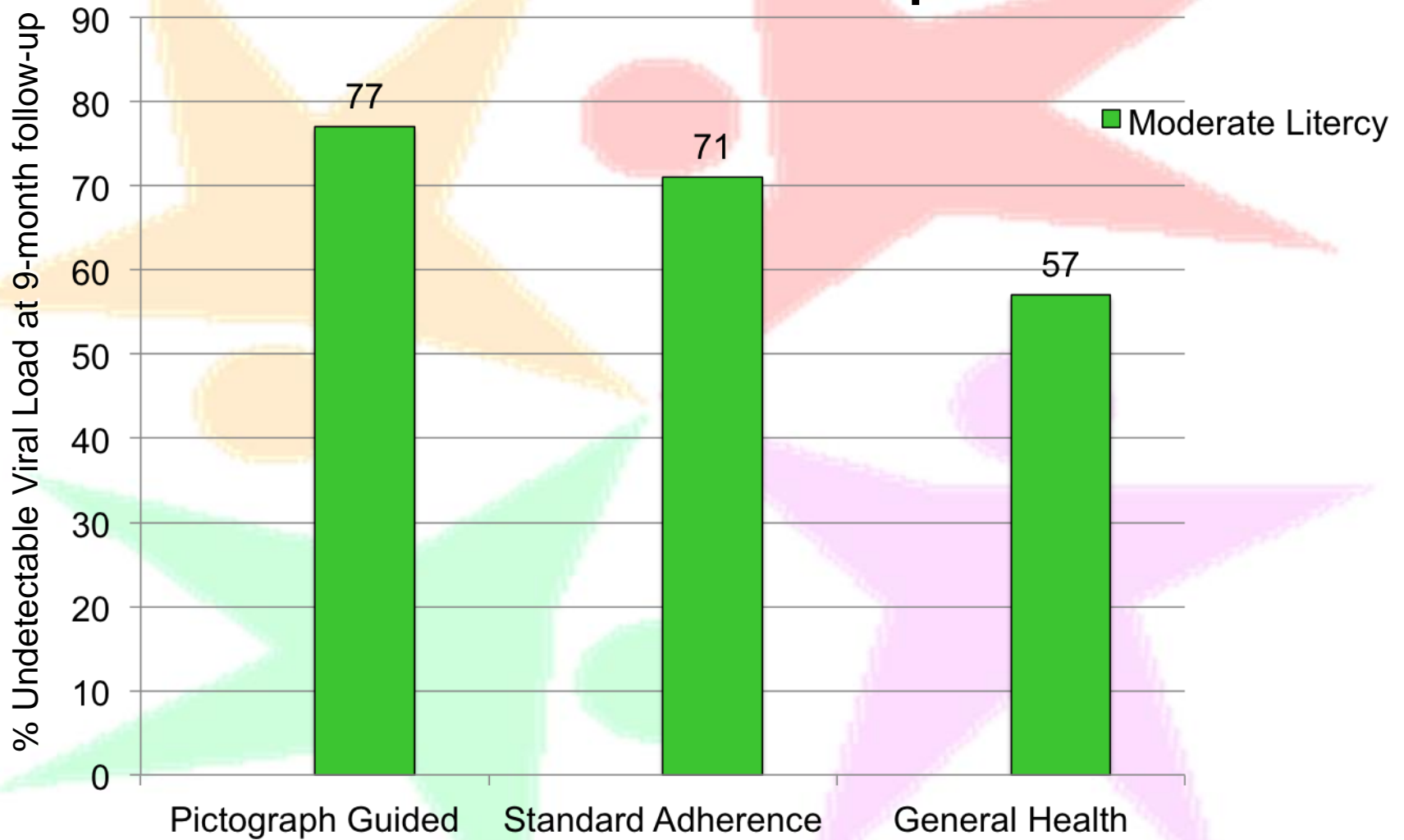
GEE Model Condition X Literacy Group Interaction, Wald X^2 =2.05, p < .01

Percent Undetectable Viral Load at Follow-up

% Undetectable Viral Load at 9-month follow-up

- Lower Literacy
- Moderate Litercy

Pictograph Guided — Lower Literacy: 65, Moderate Literacy: 77

Standard Adherence — Lower Literacy: 65, Moderate Literacy: 71

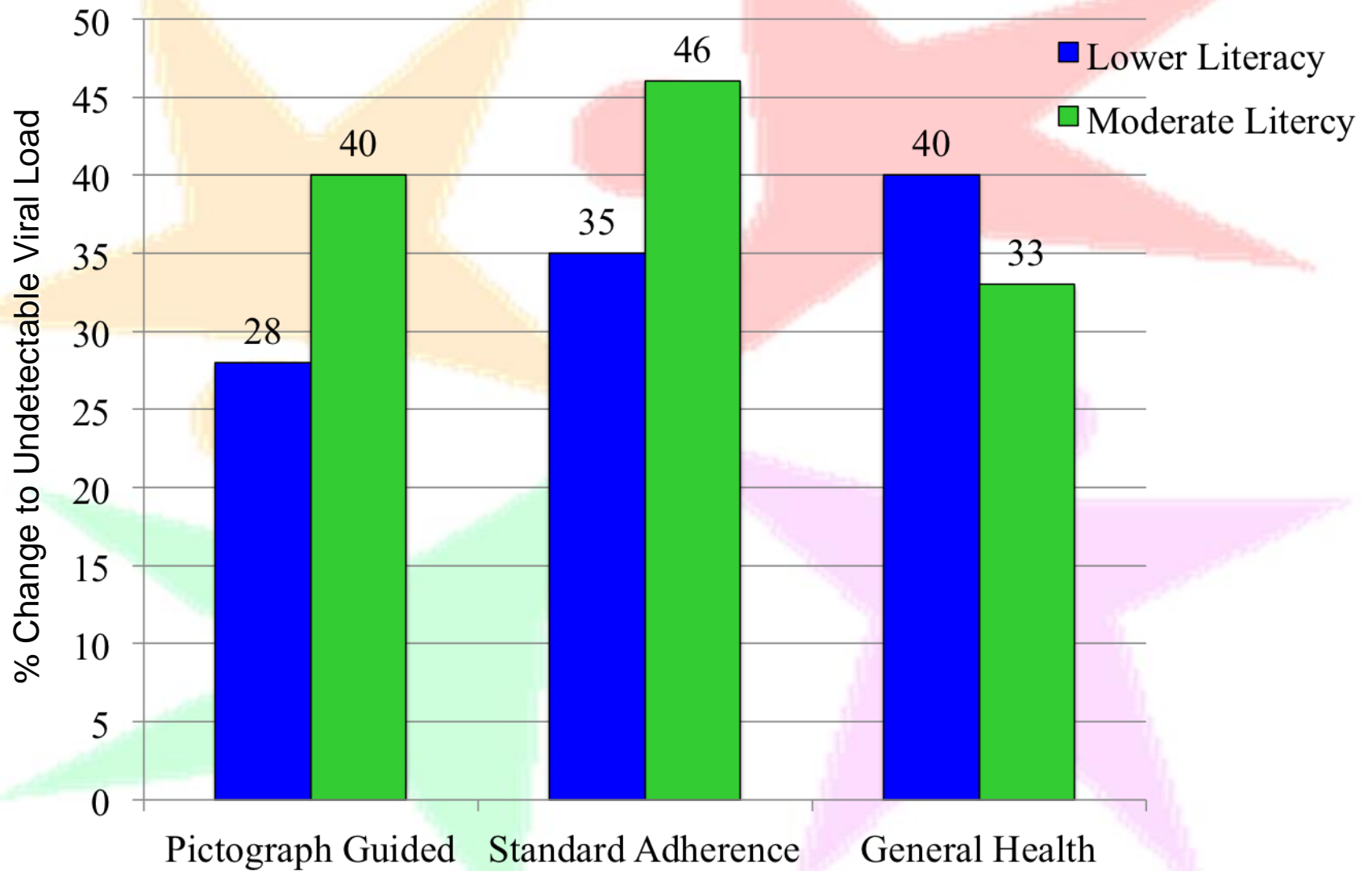General Health — Lower Literacy: 76, Moderate Literacy: 57

GEE Model Condition X Literacy Group Interaction, Wald X^2 =2.05, p < .01

Optimal Outcomes

Participants who entered the trial with detectable viral loads and achieved undetectable viral loads.

Pellowski et al., in process

Optimal Viral Load Outcomes

Optimal Outcomes

	Outcome				
	Optimal (N=102)		Suboptimal (N= 86)		
TOFHLA Scores	N	%	N	%	χ^2
80%-90%	53	52	32	37	
< 80%	49	48	54	63	4.099*

Pellowski et al., in process

Multivariate Logistic Regression Predicting Optimal Outcomes

Predictor	Adjusted OR	95%CI
Gender	1.82	0.92-3.60
Alcohol use	0.85*	0.74-0.99
Stress	0.91	0.83-1.01
Health Literacy	2.15*	1.15-4.01

Note all predictors significant in bivariate analyses,
* $p < .05$

Pellowski et al., in process

Conclusions

Brief counseling improves ART adherence for people with moderate literacy.

Tailoring counseling for moderately literate patients seems unnecessary.

Lower literacy participants demonstrated little if any benefit from adherence counseling.

Dose-proximal interventions may be needed for people with low literacy skills: Modified DOT, Wisepill, cell-phone and SMS assisted counseling.

The SHARE Project

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