# A Pilot Study to Evaluate the Effects of Utilizing the LOWLINE Model in Decreasing the Frequency of Physical Restraints on Emotionally Dysregulated Patients in the Mental Health Setting

**Presented by**
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# Background

» In the past decade or so, violent incidents have increased 110% among healthcare workers nationwide (NNU, 2016).

  ~ From 2002 – 2013, the U.S. Bureau of Labor Statistics (BLS) estimated that violence were four times more common in healthcare than in any other private industry.

  • 21% of registered nurses and nursing students were victims of physical assault (ANA, 2014).

  • Over 50% experienced some sort of verbal and or emotional abuse while working in the hospital setting (ANA, 2014).

» As a result of this realization, Lowry et al. (2016), conceptualized a new theoretical practice model called the LOWLINE Model that aims to educate nurses on how to effectively de-escalate hostile and aggressive patients in the clinical setting.
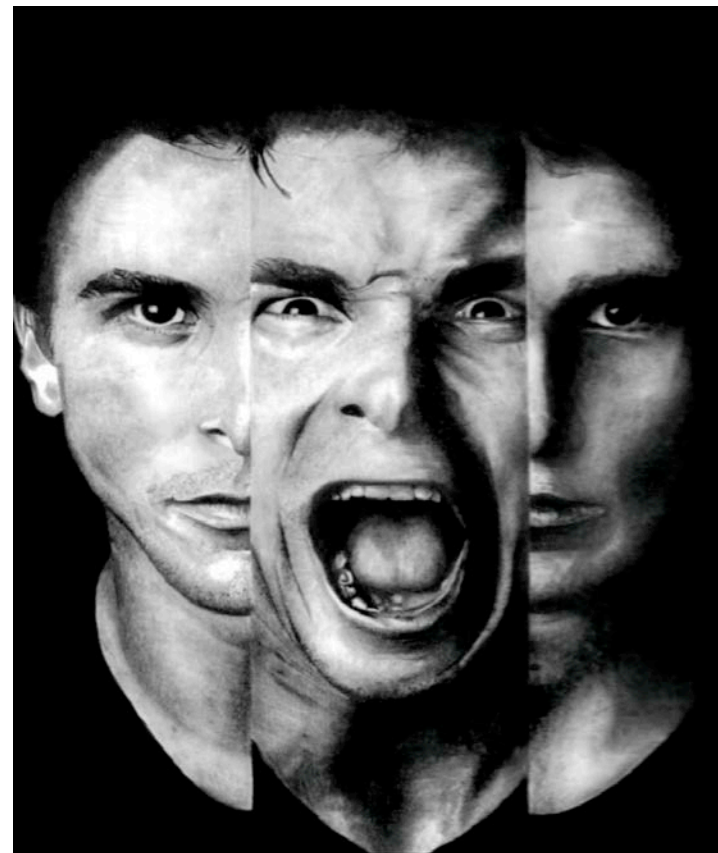
# Project Design

» **Location:**

~ Kaiser Mental Health Center (KMHC).

- 765 W College St., Los Angeles, CA 90012.

~ The Implementation Phase was executed in the form of a pilot project on unit 1.

- 14 patient max capacity.
- Most acute unit with the highest number of physical restraints.

» **Inclusion Criteria:**

~ Open to all unit 1 full-time regular staff nurses (all shifts – AM, PM, NOC).

~ Open to all per-diem and part time nurses who float to unit 1.

» **Exclusion Criteria:**

~ Unit 2 and unit 3.

~ All full-time regular unit 2 and unit 3 staff who do not float to unit 1.

» **Timeline:**

~ Three month implementation and data collection phase (09/2018 – 12/2018)

# Methodology

» **Methodology:**

~ The implementation consisted of a two-day training session that accommodated all unit 1 shifts (AM, PM, and NOC) and lasted approximately one hour.

» **Data Collection & Analysis:**

~ A pre and posttest consisting of eight questions were administered to validate the nurses' knowledge of the LOWLINE Model and the presented de-escalation skills and techniques.

# Pilot Participant Data
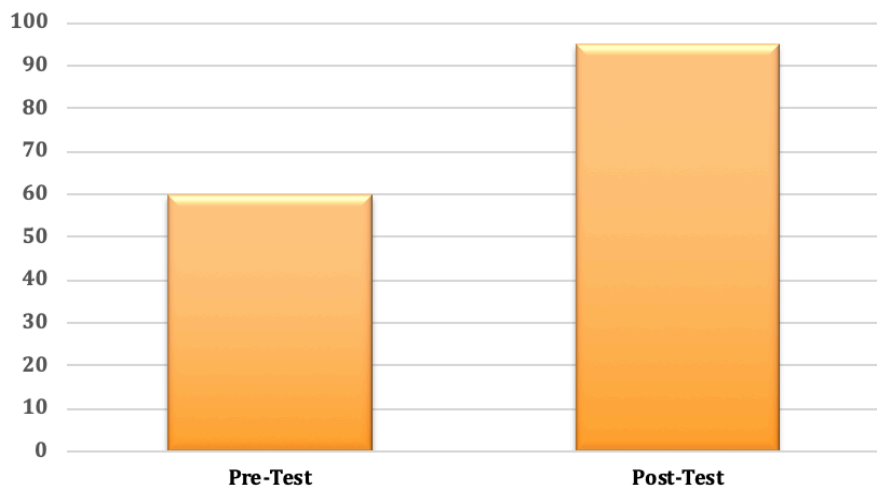
Table 1
*Participant Demographics (n=14)*

|  | Frequency | % |
|---|---|---|
| **Ethnicity** |  |  |
| Hispanic | 3 | 21 |
| Asian | 9 | 64 |
| Black | 2 | 15 |
| **Age** *(in years)* |  |  |
| 18-24 | 2 | 14 |
| 25-34 | 6 | 43 |
| 35-44 | 5 | 36 |
| 45-54 | 1 | 7 |
| **Degree** |  |  |
| ADN | 5 | 36 |
| BSN | 8 | 57 |
| MSN | 1 | 7 |
| **Licensure** |  |  |
| RN | 12 | 85 |
| RN-BC | 2 | 15 |
| **Years of Experience** |  |  |
| <2 | 2 | 14 |
| 2-5 | 5 | 36 |
| 5-10 | 3 | 21 |
| 10-20 | 4 | 29 |

# Data Analysis (Results on Participant Knowledge of the LOWLINE Model)

» Fourteen nurses (n=14) (10 staff nurses and 4 charge nurses) representing unit 1 and all shifts (AM, PM, and NOC) freely participated in this quality improvement project.
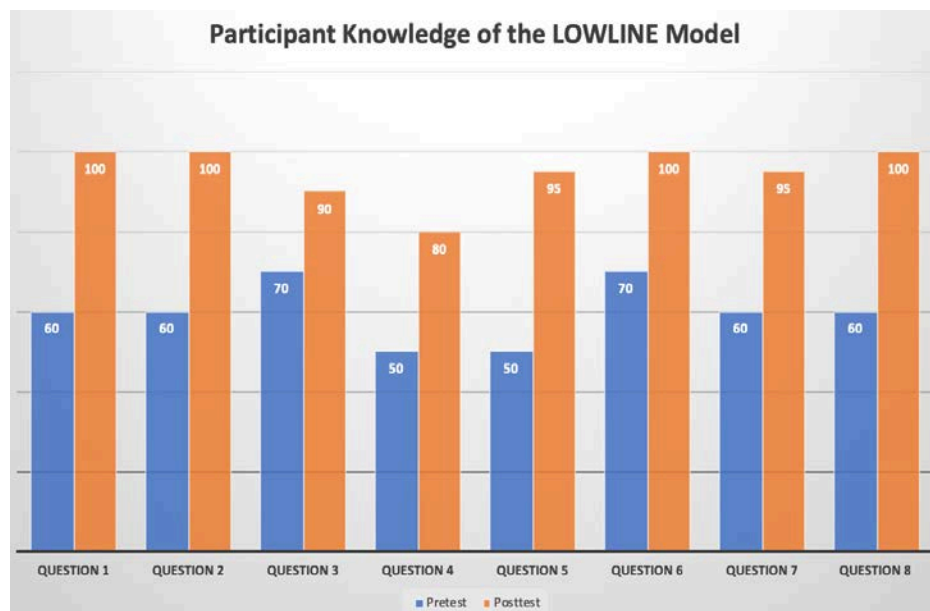


» After analyzing the data, the average total pretest score was 60%.

» At the conclusion of the class, the average total posttest score was 95%.

~ **Based on this data, quantitative results indicated an increase of 35% in nursing knowledge of the LOWLINE Model among active participants post- intervention.**
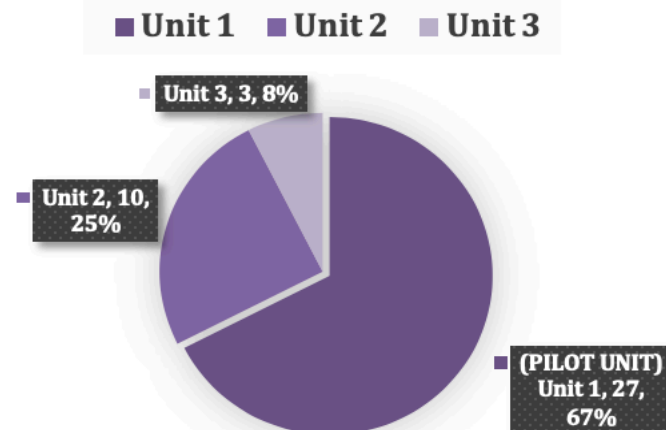
# Data Analysis (Results on Physical Restraint Frequency and Utilization)

» After successfully implementation, the amount of physical restraint episodes significantly **decreased by 16% from 32 incidents to 27 incidents in Unit 1 (pilot unit) over the course of a three-month span.**

» Most importantly, detailed analysis and evaluation of the LOWLINE staff debriefing forms revealed that **30 restraint episodes were prevented** by nurses who utilized the de-escalation skills and techniques taught in the LOWLINE Model.

**Physical Restraints (Pre – Intervention)**

■ Unit 1    ■ Unit 2    ■ Unit 3

Unit 3, 1, 2%

Unit 2, 12, 27%

(PILOT UNIT) Unit 1, 32, 71%
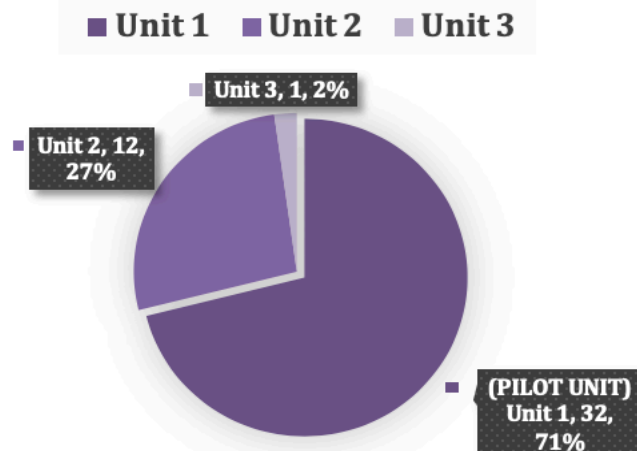
**Physical Restraints (Post – Intervention)**

■ Unit 1    ■ Unit 2    ■ Unit 3

Unit 3, 3, 8%

Unit 2, 10, 25%

(PILOT UNIT) Unit 1, 27, 67%

# LOWLINE Staff Debriefing Form



**KAISER PERMANENTE**®

**LOWLINE STAFF DEBRIEFING FORM**
**Kaiser Mental Health Center**

**Staff Initiating the Process:** _____

**Date:** _____ **Time:** _____ **Shift:** _____ **Unit:** _____

**1). Were there any triggers/early signs of agitation? (ex. Pacing, restlessness, anxiousness etc.)** ☐ Yes ☐ No

**If yes, please describe:**

**2). Did the patient's behavior support the need for LOWLINE de-escalation measures?** ☐ Yes ☐ No

**3). Was LOWLINE de-escalation techniques utilized to prevent or minimize seclusion/restraint/hold?** ☐ Yes ☐ No

**4). Was LOWLINE de-escalation techniques effective in preventing or minimizing seclusion/restraint/hold?** ☐ Yes ☐ No
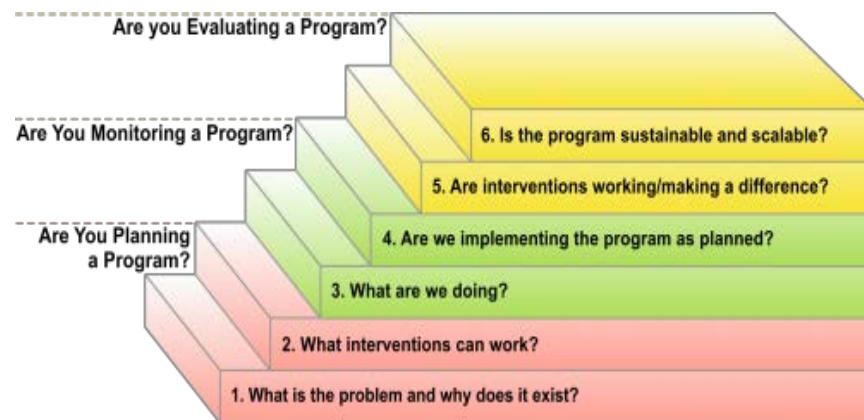
**If yes, please describe:**

*Thank you for taking the time to complete this staff debriefing form.*
*We truly value the information you have provided.*

*All responses will be securely recorded and kept confidential with non-identifiable information.*
*Responses will only be used for this quality improvement project and educational purposes only.*

# Evaluation of Outcomes

» The most significant discovery was the surprising efficacy of the LOWLINE Model in preventing hostile and agitated patients to require the need for physical interventions and restraints.

» Data analysis demonstrated that the increased knowledge of the LOWLINE Model not only benefitted the nurses but also the patients in promoting a more collaborative relationship rather than a previously directive one.



Evaluation Cycle

Situate · Design · Implement · Analyze · Use & Plan



Are you Evaluating a Program?

Are You Monitoring a Program?

6. Is the program sustainable and scalable?

5. Are interventions working/making a difference?

Are You Planning a Program?

4. Are we implementing the program as planned?

3. What are we doing?

2. What interventions can work?

1. What is the problem and why does it exist?

Source: Adapted from Rugg et al. 2004

# Conclusion

» Regardless of the underlying etiology, agitation is an acute behavioral emergency that requires immediate intervention to control symptoms and decrease the risk of injury to the patient and others (Richmond et al., 2012).

» As a result of this realization, nurses and other healthcare providers must make an indomitable effort to properly equip themselves with the necessary knowledge and skillset to effectively de-escalate agitated patients to diminish and diffuse workplace violence across the healthcare gamut.