

# Satisfaction and Technology Acceptance of Staff Utilizing Continuous Video Monitoring in Comparison to In-Room Patient Sitters

Abigail Hebb, MSN, RN, CMSRN, Michael Kistler, PhD, Beth Zamboni, PhD

UPMC Shadyside, Carlow University

## Background/ Significance

The safety of patients is a major concern in the acute care setting. Annually 700,000 to 1,000,000 patient falls occur (AHRQ, 2018) and over \$34 billion is spent on direct medical costs (CDC, 2013). Traditionally in-room patient sitters have been utilized for fall prevention. A new technology, Continuous Video Monitoring (CVM) has emerged to reduce costs while maintaining safety. Literature has mainly focused on fall prevention, program restructuring, and costs.

## Purpose

This study aims to yield insights on satisfaction of CVM in comparison to in-room patient sitters at a Western Pennsylvania hospital. Understanding staff satisfaction has rarely been discussed in literature. No literature has discussed utilization of CVM compared to in-room patient sitters using the Technology Acceptance Model (TAM).

## Methods

**Design:** Descriptive online survey distributed to registered nurses, patient care technicians, and nursing assistants on 5 medical surgical units at an acute care hospital. This study was approved by the IRB from the hospital and university.

**Population:** Convenience sample (n=55) of registered nurses, patient care technicians, and nursing assistants at a Western Pennsylvania Hospital.

**Study Instruments:** A modified version of the Technology Acceptance Model (TAM). TAM utilizes a Likert scale with response that are scored from one to seven, six questions for perceived usefulness and 6 for perceived ease of use. Additional 6 questions added to gain insights on in-room patient sitter perceived usefulness. Additional survey questions developed by investigator to gain information of demographics.

## Results

A matched paired t-test was performed and showed statistical significance, participants favored the use of in-room sitters versus CVM (**p=0.0003**).

A two-sample t-test was performed to test the mean difference in scores for the demographic groups. Due to the number of statistical comparisons performed (4), a Bonferroni correction was applied before determining if there was a statistically significant difference. There was a statistically significant difference in the mean difference scores for years of experience (**p=0.00037**).

To determine if there was an association between difference scores and age, a Pearson's correlation coefficient was calculated and showed that the correlation between difference score and age was not statistically significant (**p= 0.20**).

Satisfaction with CVM and in-room safety sitters at change of shift (n=54, one missing value) were analyzed using a Bowker's Test of Symmetry. Results showed statistically significant evidence that there is a difference between the distribution of scores (**p=0.0036**).

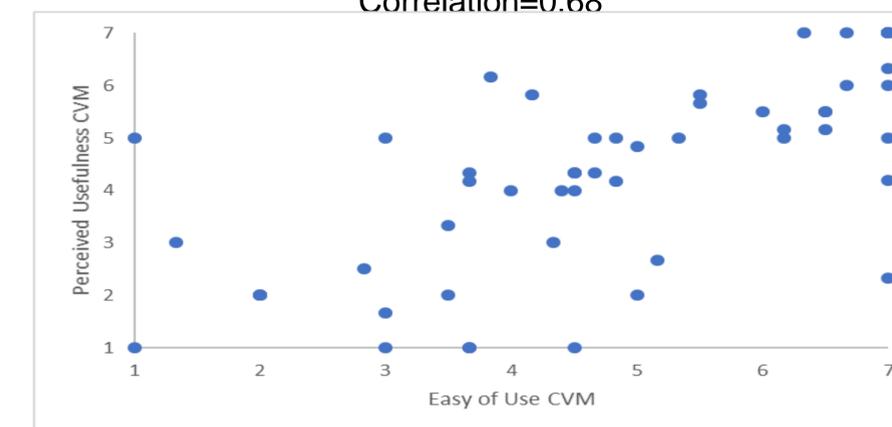
CVM	In- Room Safety Sitters			
	Yes	No	Sometimes	Don't Know
Yes	21	1	0	0
No	11	7	0	1
Sometimes	10	0	1	0
Don't Know	1	1	0	0

## Results

Pearson's correlation was done with the average of questions 19-24 (perceived usefulness) and 25-30 (perceived ease of use) to see if there was a positive correlation between perceived ease of use and perceived usefulness as in the Technology Acceptance Model.

Figure 1

Raw Correlation of Perceived Usefulness and Perceived Ease of Use of CVM  
Correlation=0.68



## Conclusions

Understanding staff satisfaction and technology acceptance is imperative when implementing technologies. Staff found in-room patient sitters more beneficial when compared to CVM. Education is a crucial component to introducing technologies in the inpatient setting. This study could be expanded to examine inpatient populations including oncology and surgical settings along with education level of staff.

## References

Agency for Healthcare Quality and Research (AHRQ). (2018). Preventing falls in hospitals. Retrieved from <https://www.ahrq.gov/professionals/systems/hospital/fallpxtoolkit/index.html>  
Centers for Disease Control (CDC). (2017). Important facts about falls. Retrieved from <http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>