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# In an Era of Reform: The Culture of Safety in Long Term Care Facilities

Said Abusalem, PhD, RN

Timothy Crawford, PhD, MPH

Mary-Beth Coty, PhD, RN

Barbara Polivka, PhD, RN



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# Culture of Safety

- Building a person-centered culture of safety is a core element in improving resident safety and care quality in LTCFs.
- An effective culture of safety affects residents' care experiences as well as healthcare workers' motivation, commitment, productivity, and effectiveness.
- Teamwork, appropriate staffing rate and mix, non-punitive responses to mistakes, and effective communication and leadership are all part of an effective culture of safety.
- Creating healthy environments that contribute to promoting optimal resident and staff outcomes requires organizational systems that emphasize building healthy cultures of safety.

## Culture of Safety- Continued

- ▶ In contrast, toxic workplace cultures have serious consequences for resident outcomes and staff well-being. High levels of sick leave, poor staff retention, and psychological ill health of employees are prevalent in toxic workplace environments.



# Adverse Events in LTCF

- Over 1.63 million Americans reside in 18,000 LTCFs.
- Several studies have reported higher rates of adverse events in LTCFs.
- Adverse events in LTCFs are mainly falls and pressure ulcers. The prevalence of pressure ulcers in LTCFs ranges from 6% to 25%, depending on factors such as staff mix, organizational commitment, and enforcing evidence-based guidelines.
- LTCF residents fall at an annual rate of 1.7 per bed, with 10% to 25% sustaining serious injuries eventually leading to death. The relationship between adverse events and a culture of safety in LTCFs has not yet been adequately explored.

# Adverse Events in LTCF-Continued

- Lower adverse events and lower mortality rates have been attributed to an appropriate RN ratio in healthcare organizations.
- Although researchers have recommended improved communication among LTCF staff as a method of reducing adverse events, limited research is available in this area.
- It is crucial in the current changing health care environment to identify organizational factors that affect adverse events and residents' safety culture in LTCFs.



# Study Purpose

- Assess culture of safety and its relationships with organizational factors such as communication and leadership in LTCFs and selected adverse events as falls and UTIs.
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# Study Aims

- 1. Identify predictors of selected adverse events (falls, pressure ulcers/wounds, and healthcare associated infections).
- 2. Identify organizational factors associated with: (a) residents' safety culture scores, and (b) selected adverse events.
- 3. Evaluate the relationships of selected adverse events with: (a) staff turnover rates, (b) staffing levels, (c) LTCF directors' leadership style, and (d) communication performance.

# Study Design and Setting

- ▶ This study used both a cross-sectional survey design and secondary analysis of existing data.
- ▶ Using standardized reliable and valid instruments, healthcare staff, including nursing supervisors and administrators, RNs, licensed practical nurses (LPNs), and nursing assistants (NAs) in participating LTCFs were surveyed.
- ▶ Administrators of a stratified random sample, 5 out of the 70 eligible LTCFs contacted agreed to participate and provided permission for their facility to participate.
- ▶ Secondary analysis of existing data from the Nursing Home Compare Website was conducted.
  - ▶ **Nursing Home Compare** website has information about the quality of care, adverse events, and staffing ratios provided by Medicare or Medicaid for certified **nursing homes** throughout the nation.



# Sample

- ▶ Limiting the sample to only Medicaid-certified LTCFs ensured a homogenous sample with similar organizational characteristics and requirements.
- ▶ A sample of LTCFs was recruited and enrolled (N = 5).
- ▶ Inclusion criteria for survey participants were English speaking and current resident care employees such as nursing supervisors, RNs, LPNs, NAs, SWs, PTs, and OTs.

# Procedure

- ▶ Trained research staff visited the facility during a scheduled staff meeting to explain the study and request participation.
- ▶ The survey packet, including a preamble letter describing the study, the survey, and an envelope were distributed to all resident care employees on every shift.
- ▶ Refreshments were provided to staff to improve the response rate.
- ▶ Reminder flyers were posted in areas such as staff break rooms and locker rooms for one month following the staff meeting.
- ▶ Data were collected anonymously, participants were provided with an envelope to return their completed survey in a study mail box.

# Measures

- **Resident safety culture.** The Nursing Home Survey on person-centered culture of safety was developed by AHRQ (2008). Reported Cronbach's alphas ranged from .63 to .84. The NHSPSC has 42 items that measure **12 composites**:

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Teamwork -4 items

Staffing- 4 items

Compliance With Procedures-3 items

Training & Skills- 3 items

Nonpunitive Response to Mistakes- 4 items

Supervisor Expectations & Actions Promoting Resident Safety- 3 items

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Handoffs- 4 items

Feedback & Communication About Incidents- 4 items

Communication Openness- 3 items

Overall Perceptions of Resident Safety – 3 items

Management Support for Resident Safety – 3 items

Organizational Learning- 4 items

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# Findings

- ▶ The 211 respondents were: licensed nurses (27%), nursing assistants (35%), administrators/managers (8%), administrative support (3%), and rehabilitation staff (13%).
- ▶ Ninety-eight participants (46%) worked overtime.
- ▶ The majority of participants were neutral (neither agreed nor disagreed) with regard to statements concerning compliance with procedures, adequate staffing levels, and non-punitive responses to errors.

# Spearman Correlations among Quality Measures, Staffing Measures, and Patient Safety Culture Subscales

	Short-Stay Ulcers	Long-stay Falls	Long-Stay UTIs	Long-Stay Ulcers
Number of Certified Beds	-0.43***	0.14*		0.54***
Number of Residents	-0.43***	0.14*		0.54***
Number of licensed nurse staff hours per resident per day	-0.50***	0.70***	0.70***	-0.35***
RN hours per resident per day	-0.88***			
LPN/LVN hours per resident per day	-0.45***	0.65***	0.72***	-0.40***
NA hours per resident per day		0.48***	0.23**	-0.27***
Physical therapy staff hours per resident per day		0.32***	0.40***	
Total Safety Score		-0.15*		
Teamwork	-0.12*	-0.14*		
Handoffs		-0.25***	-0.14*	
Organizational Learning		-0.137*		

\*p<0.05 \*\*p<0.001 \*\*\*p<0.0001

## Findings- Continued

- Highest mean scores were feedback and communication about incidents with a mean of 4.35 (SD = 0.71), mean supervisor expectations and actions promoting resident safety 4.03 (SD = 0.89), and mean score of overall perceptions of resident safety 4.24 (SD = 0.68). (A score of 4 = agree and 5 = strongly agree).
- A Spearman's rank-order correlation was run to determine the relationship between rate of falls and handoffs reports. There was a negative correlation between handoffs report and rate of falls  $r_s = -0.247$ ,  $p < 0.0001$ , and there was a negative relationship between handoffs and rate of UTIs  $r_s = -0.143$ ,  $p < 0.05$ .

## Findings- Continued

- Risk for falls increased as the number of residents per facility increased [Rate Ratio (RR) = 1.02 (95% Confidence Interval (CI) = 1.01 -1.02)] and as the number of LPN hours per resident increased [RR = 37.7 (18.5 – 76.5)].
- As the number of licensed RN plus LPN staff hours per resident per day increased, rate of falls decreased 79% [RR = 0.21 (95% CI = 0.13 – 0.34)].
- As the culture of safety scores increased, the risk of fall decreased 26% [RR = 0.74 (95% CI = 0.67 -0.82)], UTIs decreased 20% [RR = 0.80 (95% CI = 0.75 - 0.86)], and short-stay ulcers decreased 7% [RR = 0.93 (95% CI = 0.90 – 0.97)].

# Generalizing Estimating Equations (Poisson Distribution) to Predict Rate of Care Error Rates

	Falls	Urinary Tract Infections	Short-Stay Ulcers
	RR (95% CI)	RR (95% CI)	RR (95% CI)
Number of Residents	1.02 (1.01 – 1.02)	1.01 (1.01 – 1.01)	0.98 (0.98 – 0.98)
Number of Licensed Nurse Staff Hours per Resident Day	0.21 (0.13 – 0.34)	0.21(0.15 – 0.31)	---
RN Hours Per Resident Day	---	---	0.12 (0.09 – 0.15)
Physical therapy staff hours	---	---	0.24 (0.18 – 0.34)
LPN/LVN Hours per Resident Day	37.7 (18.5 – 76.5)	61.5 (36.6 – 102.4)	---
Culture Safety Score	0.74 (0.67 – 0.82)	0.80 (0.75 – 0.86)	0.93 (0.90 – 0.97)

RR = Rate Ratio  
 CI = Confidence Interval  
 Note: Variables with a no information were not included in the respective models.



# Conclusions

- ▶ The findings suggest that there is a need to build a strong culture of safety to improve LTCF employee retention and foster PCCS attributes.
- ▶ With the shortage of RNs in LTCFs and new reimbursement regulations, many LTCFs are hiring LPNs to have full staffing and save money. LPNs may lack essential knowledge to decrease the rate of falls.
- ▶ One option is to develop a Person-Centered Comprehensive Unit-based Safety Program (CUSP) for LTCFs similar to the AHRQ program in acute care.