

Predicting Resident Aggression using the Aggressive Behaviour Risk Assessment Tool (ABRAT-L)

Lori Young and Brigette Berry



“Over 60 deaths attributed to resident
to resident violence over the past 12 years”

CTV News 2013

Caspi Information



Death of Elders Due to Resident-to-Resident Incidents in Dementia in Long-Term Care Homes

Eilon Caspi PhD, School of Nursing, University of Minnesota, Minneapolis, MN

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Overview

- Resident-to-resident incidents (RRI) in long-term care (LTC) homes are a prevalent, concerning but underrecognized phenomenon (Lachs et al. 2016).
- A growing number of studies examined various aspects of RRI in LTC homes, including prevalence, characteristics, and causes (McDonald et al. 2015).
- One groundbreaking study examined physical injuries caused by RRI in nursing homes (Shinoda-Tagawa et al. 2004).
- Only one study examined fatal RRI in LTC homes in Australia (Murphy et al. 2017).
- No studies have been conducted on fatal RRI in North America.

Objectives

- Examine the circumstances surrounding the death of elders as a result of RRI in dementia in LTC homes.
- Identify practically useful patterns to inform prevention.
- The study is *Not* meant to identify the incidence of fatal RRI.

Qualitative Research Methods

Source of data (All publically available information):

- Newspaper articles published online (over 150)
- Death Review Reports (GTLCRC to CCO, 1990-2016)

Comprehensive Internet search: Spring 2012 – Fall 2017

Data detection and extraction: Structured Guide

Data Analysis: Time period: Summer – Fall 2017

- Miles & Huberman (1994) approach
- Qualitative review and abstraction of narratives
- Complemented with tabulation by aggregation / counts
- Simple descriptive statistics

Findings

n = Number of deaths for which data were available

- Identified 106 deaths of elders (> 60 y/o) as a result of RRI in dementia (at least one of the residents involved in the incident had dementia)
- Time period: Deaths occurred between 1988 - 2017
- Type of LTC home (n=50): Majority in nursing homes; 26% in assisted living
- Countries: Canada (n=51); USA (n=42); Australia & New Zealand (n=4 & n=2); UK (n=5); Singapore (n=1)
- Characteristics of Residents**
- Age targets (n=103): 84.5 years old (average)
- Age exhibitors (n=76): 75.2 years old (average)
- Gender targets (n=100): Men 52%; Women 48%
- Gender exhibitors (n=99): Men 74%
- Newly admitted residents (< 3 months): 23 deaths

The Circumstances Surrounding the Deaths:

- Location (n=84): Inside bedrooms (59%)
- Time of day (n=63): Evening (44%) and Night (14%)
- Weekend (n=94): 38%
- Roommates (n=77): 43%
- Not witnessed by staff (n=84): 62%
- Nature of physical contact (n=99): "Push-Fall" incidents (44%); Head and/or face beating (22%)
- Object used against target (n=88): 31%
- Nature of physical injury (n=79): Head/face or brain injuries (50%); Hip fractures (33%)
- Cause of death (n=69): Blunt head trauma (29%)
- Complications from fractures (20%)
- Pneumonia (11%); Strangulation/Suffocation (10%)
- Time until death (n=95): 16 days (average); 24% died on same day

Practical Implications

The patterns, gaps in supervision, and vulnerability areas identified could inform efforts to prevent deaths in similar circumstances.

This could be accomplished through:

- Staff training programs (e.g. recognition, prevention, de-escalation).
- Increase staffing levels/supervision during vulnerability time periods.
- Strengthen residents' meaningful engagement ("activities") program.
- Policies and procedures (e.g. admission; roommates' assignment).
- Physical environment (shift to private bedrooms; floor plan/layout).
- Develop and use assistive technology (e.g., to alert staff in real time).

Limitations

Incomplete data; Limited ability to verify accuracy of data (such as diagnosis of dementia); small sample limiting generalizability

Future Directions

- Develop a centralized surveillance / medico-legal dataset.
- Conduct the first national study on injurious and fatal RRI (such as using coroner records and police records).
- Bridge gap in MDS 3.0 Section E Behaviors (Caspi, 2013).
- Develop a survey deficiency citation (F-Tag) for RRI in CMS-certified nursing homes (for 20 reasons why, see Caspi, 2017).
- Conduct research in assisted living (Caspi, 2015) & VA LTC homes.
- Evaluate staff training program to demonstrate reduction in RRI.

Acknowledgements

The study was supported by Theresa Piccolo, wife of Frank Piccolo, Toronto, Canada



Caspi Information

- World wide study
- 105 deaths 1988-2017
 - Canada 51
 - USA 42
 - Australia and New Zealand 6
 - UK 5
 - Singapore 1



Type of Incidents

- Push fall incidents (44%)
- Head or face beating (22%)
- Object used against target (31%)





Characteristics of residents

Victims

- Average age 84.5 yrs
- Men 52%
- Women 48%

Exhibitors

- Average age 75.2 yrs
- Men 74%

Newly admitted residents involved in 23 deaths (< 3 months)



Incident

- 2013
- New Resident
- Violent incident against staff member
- Information we did not have after admission process

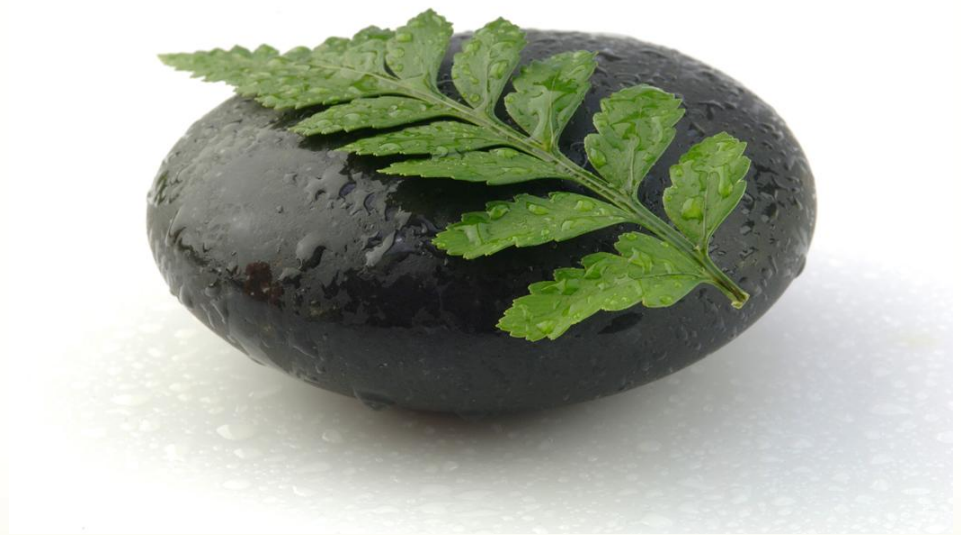


What are we talking about

- Not talking about predictable resistance to care
- Talking about overt episodes of physical aggression
- Incidents that seem to “come out of nowhere”



What if we could predict which residents were more likely to become aggressive or violent?





Began with literature review and research of behaviours

- Looking for a Risk Assessment Tool for resident aggression
 - Have one for falls, skin issues etc.
 - What about for aggression
- Significant look at behaviours
 - What motivates behaviours in residents with dementia?
 - ?? Model
 - Would a risk assessment tool fit with such a model



Needs Driven Behaviour Care Model

- All behaviour has meaning
- Background Factors
 - Unalterable characteristics of the individual
- Proximal Factors
 - Environmental aspects that impact inter-personal relationships

Risk Assessment Tools

- Brøset Violence Checklist (2007)
- RAGE (1992)
- M55 Violence Risk Assessment Tool
- STAMP





ABRAT

- Initially used in Med/Surg Unit
- Only tool we discovered to contain both proximal and backrrough elements
- Why we chose to pilot use of this tool
- Granted permission by Dr Kim to trial in LTC.
 - Volunteered to help us with data interpretation
- Drafted an assessment tool from Dr. Kim's article

Aggressive Behaviour Risk Assessment Tool (ABRAT)

Revised version April 2015

Complete over first 24 hour of Admission

Contact family to accurately answer the question on history of physical aggression and mania. Although it might be uncomfortable to raise these issues with family, the information is very important. Review questions with staff at each shift report to capture any evidence of the behaviours listed below. Complete Behaviour Mapping for all residents who score ≥ 3 on the ABRAT.

- 10 elements
- Originally developed for use in Med/Surg unit

Behaviour present ✓ ✗	Characteristic	Description/Detail	D	E	N
	History of physical aggression	Has the person ever demonstrated physical aggression of any kind?			
	History of signs or symptoms of mania	Clinically significant level Irritable, volatile			
	Confusion/Cognitive Impairment	Any impairment			
	Anxiety	Clinically significant level Flushed, rapid speech, grimacing, writhing or hyperventilating			
	Physically aggressive/threatening	Pushing, hitting objects, staff or others. Threatening to harm individuals, shaking their fist, significant verbal abuse.			
	Agitation	Clinically significant level Demonstrates behaviours eg: pacing, disrobing, grabbing people, screaming, crying, repetitive mannerisms			
	Mumbling	Talking under his/her breath, criticizing staff or repetition of the same question or request			
	Staring, glaring or avoiding eye contact				
	Shouting/demanding	Loud behaviour, shouting out.			
	Threatening to leave				
	Total				



- Knowing which residents are more likely to demonstrate aggression allows homes to:
 - Complete Behaviour Mapping to identify triggers for both increased and decreased agitation
 - Put safety processes in place for staff
 - Admission
 - Change in condition
 - Prevent aggressive episodes from occurring



Study # 1 May – Aug 2013

- Used ABRAT to assess all residents in two Extendicare Long Term Care Homes
- 316 assessments
- Correlation between ABRAT score and aggression
- Collected DRS, ABS, Incidents, information on behaviour mapping and care planning.



Article One



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Contents lists available at [ScienceDirect](#)

Geriatric Nursing

journal homepage: www.gnjournal.com



Feature Article

Utility of the Aggressive Behavior Risk Assessment Tool in long-term care homes



Brigette Berry, MHS^a, Lori Young, RN^a, Son Chae Kim, PhD, RN^{b,*}

^a *Extendicare (Canada) Inc., Unit 227, 333 Aspen Glen Landing SW, Calgary, AB T3H 0N6, Canada*

^b *St. David's School of Nursing, Texas State University, 1555 University Blvd., Round Rock, TX 78665, USA*

ARTICLE INFO

Article history:

Received 12 November 2016

Received in revised form

6 February 2017

Accepted 7 February 2017

Available online 11 March 2017

ABSTRACT

This study was conducted to determine the utility of the Aggressive Behavior Risk Assessment Tool (ABRAT) and the Aggressive Behavior Scale (ABS) for predicting aggressive incidents among newly-admitted and existing residents of two long-term care homes in Canada. Of 316 residents, 27 had at least one aggressive incident (8.5%). Receiver operating characteristics analysis showed that the area under the curve for the ABRAT was 0.86 (95% Confidence Interval [CI], 0.81–0.92) and that for the ABS

ABRAT-L Validation Study 2018



Conclusions

- Sensitivity and specificity for LTC use OK but could be better
- Younger residents higher likelihood of demonstrating aggression
- 100% of residents who demonstrated aggression had cognitive impairment
- Depression not a significant factor
- Further work needed



Follow-up Study Jan –Dec 2014

- New admissions only
- 23 Extendicare homes across Western Canada
- 724 residents
- Revised items on the original ABRAT
 - New item “Age 85 yrs or less”
 - 5 items from original tool
- Tracked aggressive episodes, age, gender, behaviour mapping and care planning




Article Two

JAN

Informing Practice and Policy Worldwide through Research and Scholarship

RESEARCH METHODOLOGY: INSTRUMENT DEVELOPMENT

Aggressive Behaviour Risk Assessment Tool for newly admitted residents of long-term care homes

Son Chae Kim , Lori Young & Brigitte Berry

Accepted for publication 30 November 2016

Correspondence to S.C. Kim:
e-mail: sck30@txstate.edu

Son Chae Kim PhD RN
Professor
St. David's School of Nursing, Texas State
University, Round Rock, Texas, USA

Lori Young RN
Regional Director
Extendicare (Canada) Inc., Unit 227,
Calgary, Alberta, Canada

KIM S.C., YOUNG L. AND BERRY B. (2017) Aggressive Behaviour Risk Assessment Tool for newly admitted residents of long-term care homes. *Journal of Advanced Nursing* 00(0), 000–000. doi: 10.1111/jan.13247

Abstract

Aim. The aim of this study was to revise the 10-item Aggressive Behaviour Risk Assessment Tool for predicting aggressive events among residents newly admitted to long-term care homes.

Background. The original tool had acceptable sensitivity and specificity for identifying potentially aggressive patients in acute care medical-surgical units, but its usefulness in long-term care homes is unknown.

Design. A retrospective cohort study design was used.

ABRAT-L Validation Study 2018



Conclusions

- Stronger correlation between ABRAT score and probability of resident demonstrating aggression
- Better sensitivity and specificity.
- Targeted more to LTC resident characteristics
- More work needed to test possible weighting of certain elements on the ABRAT



Validation Study June – Dec 2017

- ABRAT-L developed specifically for Long Term Care
- Weighted scoring for two elements
 - History of aggression
 - Demonstrating aggression during assessment period
- Score 0 – 8
- 615 assessments
- 22 Extendicare LTC homes across Canada



Article Three



Contents lists available at [ScienceDirect](#)

Geriatric Nursing

journal homepage: www.gnjournal.com



Aggressive behaviour risk assessment tool for long-term care (ABRAT-L): Validation study

Son Chae Kim^{a,*}, Brigette Berry^b, Lori Young^b

^a St. David's School of Nursing, Texas State University, 100 Bobcat Way, Round Rock, TX 78665, USA

^b Extendicare Inc., Unit 227, 333 Aspen Glen Landing SW, Calgary, Alberta T3H 0N6, Canada

ARTICLE INFO

Article history:

Received 14 September 2018

Received in revised form 12 November 2018

Accepted 19 November 2018

Available online xxx

Keywords:

ABSTRACT

This prospective cohort study was conducted to validate the usefulness of the Aggressive Behaviour Risk Assessment Tool for Long-Term Care (ABRAT-L) in predicting aggressive events. A total of 615 newly admitted residents at 22 long-term care homes in Canada were included. The risk of aggression was assessed using the six-item ABRAT-L within 24 hours of admission, and incident reports of aggressive events occurring within 30 days of admission were collected. Forty-seven residents out of 615 had one or more aggressive events (7.6%). The receiver operating characteristics analysis of ABRAT-L showed a good discriminant ability at the previous recommended cut-off score of 4, with a sensitivity of 0.81 and a specificity of 0.71. The usefulness



Conclusions

- Sensitivity and specificity improved
- Cut off score of ≥ 4 on the ABRAT-L was the correct choice
- 1st week post admission residents most likely to demonstrate aggression



Risk for newly admitted residents

- 615 assessments
- 47 residents demonstrated aggression during 30 days post admission
- Of those, 24 residents demonstrated aggression during first 2 days post admission
- Another 6 residents had demonstrated aggression before end of 1st week
- Therefore 30/47 residents demonstrated aggression before 7th day of admission (79%)

New Tool

- 6 elements
- Slight refinement to layout
- Weighting
- Information for staff on how to complete

**Aggressive Behaviour
Risk Assessment Tool
for Long Term Care
(ABRAT-L)**

Revised version July 2018

Complete within first 24 hours of Admission

Each shift (D/E/N) identifies whether any of the following characteristics occurred on the right hand side of the table. Staff must place either a ✓ or an X in each assessment box. Contact family to accurately answer the question on history of physical aggression. Although it might be uncomfortable to raise this issue with family, the information is very important. Review questions with staff at each shift report to capture any evidence of the characteristics listed below.

Characteristics		Description/Examples			
2	History of physical aggression	Has the person ever demonstrated physical aggression of any kind?			
1	Age 85 years or less	Is the resident younger than 85?			
			D	E	N
1	Confusion/ Cognitive Impairment	Any impairment			
1	Anxiety	Flushed, rapid speech, grimacing, writhing or hyperventilating			
2	Physically aggressive/ threatening	Pushing, hitting objects, staff or others. Threatening to harm individuals, shaking fist, significant verbal abuse.			
1	Threatening to leave				
0	None of the above	Circle "0" if none of the above are present.			
Total Score					

Scoring of ABRAT-L

Circle the numbers in the column on the left that apply or were present during the assessment period (any number of check marks present from the shift reports). Add the numbers from the column on the left together and place the sum in the "Total Score" box. Some elements score 1 point and some elements score 2 points so add the total number of points.

Signature for final scoring.....

Date.....

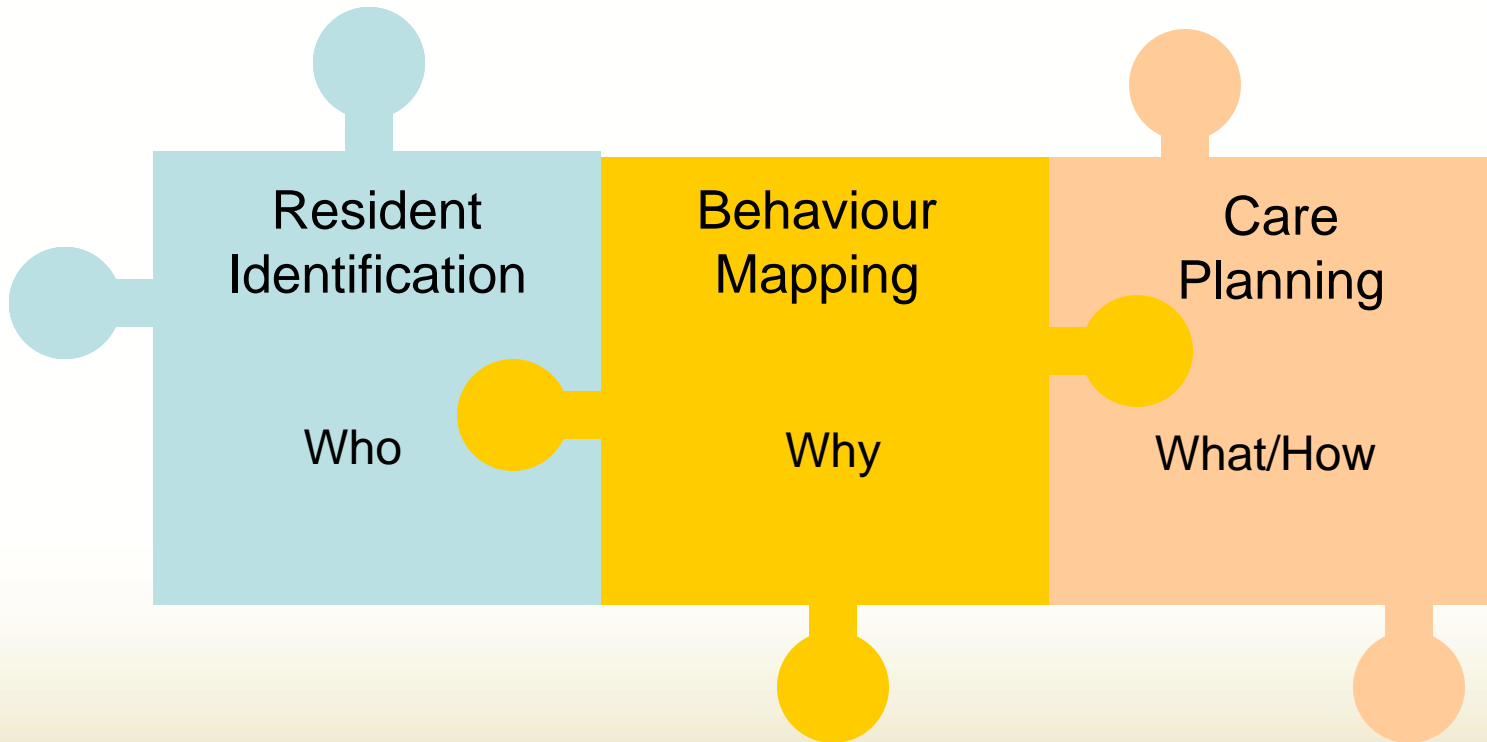


Analysis of data

- Dr Son Chae Kim, PhD, RN
Professor, St. David's School of Nursing
Texas State University
- Author of original article on Aggressive Behaviour
Risk Assessment Tool and partner in studies



Three elements in prevention of aggression





Next Steps

- Share findings widely
- Extendicare has prepared an “implementation package” which includes detailed policy and procedure, copies of the tool etc.
- Already shared with many organizations
- Available on request



Questions

- Caspi E. The circumstances surrounding the death of 105 elders as a result of resident-to resident incidents in dementia in long-term care homes. *J Elder Abuse Negl.* 2018;1–25.
- Berry B, Young L, Kim SC. Utility of the Aggressive Behavior Risk Assessment Tool in long-term care homes. *Geriatric Nursing.* 2017;38(5):417–422.
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Thank You

- Lori Young
 - lyoung@extendicare.com
- Brigette Berry
 - bberry@extendicare.com

