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Running Head: NURSING AIDE REPORTS OF PHYSICAL ASSUALT

**Nursing aide reports of combative behavior by residents with dementia:  
Results from a detailed prospective incident diary**

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## **Nursing aide reports of combative behaviour by residents with dementia: Results from a detailed prospective incident diary**

### **Abstract**

#### **Objectives**

This study examined nursing aides' (NAs) perspectives of specific incidents of combative behaviour from nursing home residents with dementia, particularly their attributions for the behaviours.

#### **Design**

This research is part of a larger mixed-method study exploring combative behaviour as experienced by NAs. The data for this component were collected using a cross-sectional survey design. NAs used a prospective event-reporting log or "diary" to record consecutive incidents of combative resident behaviours.

#### **Setting**

Eleven rural nursing homes located in a mid-Western Canadian province.

#### **Participants**

Eighty-three full-time, part-time, and casual NAs.

#### **Measurements**

NAs used the diary instrument to document details of each incident of combative behaviour over a 144 hour period. Findings from the dairies were explored in subsequent focus groups (reported elsewhere).

#### **Results**

The 83 NAs reported 409 incidents linked to residents with dementia, with a range of 1 to 28 incidents per aide. The frequency of incidents in the last month was reported as: none (11.1%),

1-5 times (58.7%), 6-10 times (11.1%), more than 10 times (19.0%). The majority of incidents occurred in residents rooms (65%) during personal care, with the most frequent behaviours reported as slapping, squeezing, punching or hitting, and shoving. The main perceived causes of the behaviour were cognitive impairment and residents not wanting care. NAs reported they could control or modify the cause in only 3% of incidents, and they were not optimistic about preventing future combative behaviours. They continued to provide care in 89% of incidents.

### **Conclusion**

In the diaries NAs identified resident-related factors (cognitive impairment and not wanting care) as the main causes of combative behaviour, and they reported having no control over these factors. In the focus groups conducted to explore diary findings, NAs reported system-level factors, also beyond their control, which affected their practices and increased their risk of exposure to combative behavior. Taken together, the results of this research program suggest a need for a broad multi-faceted strategy aimed at addressing the modifiable risk factors, which includes recognizing NAs as equal partners in a team process backed by strong organizational support and commitment.

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## Introduction

Nursing aides (NAs) provide the majority of direct care in long-term care settings and are at the highest risk of experiencing combative behaviour or injury from residents.<sup>1</sup> Behavioural symptoms have been described as “ubiquitous” in nursing homes, with prevalence rates of over 80%.<sup>2,3</sup> Terms such as “violence,” “aggression,” and “disruptive behaviour” have been used in the literature to describe behavioural symptoms in dementia. This language is gradually changing to more person-centered terms such as “responsive”<sup>4</sup> and “self-protective,”<sup>5</sup> reframing such behaviours as indicators of unmet need. The language used in the studies cited in this paper was retained for accuracy of reporting, with the recognition that terminology is evolving to reflect the perspectives of the person with dementia.<sup>6</sup> Although prevalence estimates vary depending on definitions and measures used, two large studies found that approximately 20% of nursing home residents exhibited aggressive behaviour.<sup>7,8</sup> When only residents with dementia are included, the rates are even higher. For example, a review paper<sup>9</sup> found that 48% to 82% of residents exhibited aggressive or agitated behaviours and 11% to 44% exhibited physically aggressive behaviours alone. Studies examining predictors of such behaviours have typically focused on resident-related factors<sup>8,10</sup> but more recent studies have begun to examine environmental and organizational factors as well.<sup>3,11,12</sup>

Physically aggressive behaviour has been reported as the most “disruptive”<sup>13</sup> and difficult for nursing home caregivers to cope with,<sup>14</sup> leading to feelings of powerlessness, sadness, anger, ineffectiveness,<sup>15</sup> and burden.<sup>16</sup> NAs have the highest incidence of workplace injury among all workers in the United States, but current rates are described as grossly underestimated because 60% to 80% of incidents are unreported.<sup>1</sup> A systematic review of aggressive behaviour of nursing home residents toward caregivers<sup>17</sup> found a large variance in prevalence from 1.2 incidents per

day to 1 to 4 per year, likely due to differences in study measures and designs. A national survey of NAs working in US nursing homes<sup>18</sup> found that 34% had experienced physical injury from residents in the previous year. In our earlier research<sup>19</sup> we found that 64.5% of NAs employed in nursing homes with dementia special care units(SCU) and 73.4% of NAs in facilities without a SCU experienced aggressive resident behaviour in the past year.

Previous studies have focused mainly on the prevalence and predictors of behavioural symptoms in nursing home residents with dementia, although researchers have begun to examine caregivers' perceptions. Todd and Watts<sup>20</sup> used the attribution model in a qualitative retrospective study of challenging behaviours witnessed by qualified nurses and psychologists. More recently, Isaksson et al.<sup>11</sup> conducted interviews with female NAs and nurses about their perceptions of "violence" from residents, using vignettes of behavioural incidents. Several studies have concluded that there is a need for further research on caregivers' perceptions of behavioural symptoms and the impact on care<sup>15</sup> and the triggering factors and interactive events during personal care.<sup>17</sup> Few studies have examined NAs' perspectives of specific incidents of combative behaviours, using a prospective design based on actual incidents. Understanding the perspectives of direct-care staff about the circumstances, causes, and potential prevention strategies has implications for development of interventions to reduce exposure to these behaviours and to help direct-care staff manage them more effectively.

The study reported here is part of a larger program of research focusing on dementia care in rural nursing homes, which has identified challenges in meeting the needs of residents with dementia in these settings<sup>12,19,21,22</sup> and higher job strain among NAs than RNs.<sup>23</sup> The current study was aimed at learning about NAs' perceptions of combative behaviours from nursing home residents. Attribution theory was used as the framework to investigate how NAs interpret these

behaviours and their attributions for the cause of the behaviours. The model proposed by Weiner<sup>21</sup> suggests that when an event is unexpected, negative, or important, a causal search is undertaken to determine why it occurred. The three dimensions of causality (locus, stability, controllability) have implications for NAs' expectancy of success in the future, emotional reactions, distress, and behavioural responses.<sup>25</sup> For example, attribution to a stable or nonmodifiable cause sets up an expectation that the outcome (e.g., resident behaviour) will continue to occur and helplessness can be the consequence for the caregiver.

### **Methods**

Data for the larger study were collected using two methods: a prospective event-reporting log or "diary" to document consecutive incidents of combative behaviours and focus groups to further explore NAs' perceptions of events following analysis of the diary data. Focus group findings are reported elsewhere along with details regarding the study methods.<sup>12</sup> The current paper focuses on findings from the structured diaries. With respect to the language used in this study, the diary used the term "aggressive" to refer to resident behaviour and "assault" to refer to the outcome for caregivers, without implying any intent on the resident's behalf to cause harm. At the time the data were collected in the study sites, these were the terms in common usage and understood by participants. We recognize and support the positive trend toward more patient-centered language with respect to behaviours associated with dementia.

### **Setting and Sampling**

This study was conducted in the western prairie province of Saskatchewan, Canada, using a cross-sectional survey design. Sampling for the larger study was conducted by identifying rural nursing homes (defined as those located in centres with populations of 15,000 people or less) with SCUs and permanent assignment of staff to the SCU. Eight facilities met these criteria, and were included in the study, along with three non-SCU facilities of the same size. Because the

focus in this component of the study was on NAs' attributions for resident behaviours, data were pooled across facilities and units. All 11 facilities agreed to participate in the study and provided operational approval. Ethical approval was obtained from the University of Saskatchewan Behavioural Research Ethics Committee. The facilities ranged in size from 59 to 157 beds ( $M = 107$ ,  $Mdn = 101$ ). Within these 11 facilities all NAs were invited to participate. Return of the completed diary was deemed to indicate consent to participate in the study.

### **Instrument Development**

To prepare for the study we developed a prospective structured event reporting diary to collect data on NAs' attributions for resident behaviour, as well as other constructs derived from attribution models (e.g., caregiver emotions and behaviours) and circumstances of the incident. The diary method has been used by family caregivers to document the behaviour and emotion of older adults, including those with dementia.<sup>27,28</sup> Instrument development was carried out in a pilot study involving two rural facilities, where NAs completed two iterations of the diary followed by exploratory focus groups. Response rates ranged from 77% to 95%, with a total of 60 diaries completed during the development phase; 79 NAs attended eight focus groups. Revisions were made to improve comprehension, readability, portability, and ease of completion.

The third and final version of the diary had two sections. The first section included demographic and employment characteristics. Five-point rating scales were used to assess the usefulness of Professional Assault Response Training (PART)<sup>29</sup>, overall job satisfaction, and the effect of working with "physically aggressive residents" on job satisfaction. PART provides tools to reduce conflict and prevent workplace injuries but is not a dementia-specific program. NAs were asked how many times in the last month they had been "physically assaulted" by a resident. The second section of the diary included space to document up to 30 incidents of physical aggression. For each incident experienced over 144 consecutive work hours, NAs were

asked to complete a series of questions as soon as possible after the incident (Table 1).

[insert Table 1 about here]

### **Data Collection and Analysis**

On-site meetings were held with NAs to provide background information and an orientation to the study, and to distribute the diary packages, which included a cover letter, spiral-bound diary, and a stamped, self-addressed return envelope. Direct mail or telephone access was not possible because the health regions would not provide NAs' contact information. Funding was offered to the facility director to bring in up to three additional NAs during meeting times but some were unable to do so because of limited staff availability. Based on estimates provided by directors, a total of 679 NAs, including full-time, part-time, and casual staff, were employed in the 11 facilities during the study period, 31% of whom were able to attend the orientation meeting and to directly receive the study packages. The directors were asked to distribute packages to NAs who were not working at the time of the meetings. At the meetings, and in the written instructions, we stressed that we were interested in all incidents and that intensity of each incident was to be rated on a 5-point scale from "mild" to "intense/severe." We explained that diaries could not be traced to individuals, that only the researchers would have access to the data, and that only aggregate data would be reported.

Descriptive analyses were conducted on demographic questions. Frequencies were computed for the forced-choice questions (e.g., type of behaviour), and averages for the 5-point rating scales (e.g., intensity of the incident). Responses to open-ended questions were coded and categorized (i.e., location of incident, perceived main cause of the behaviour, other factors perceived to be contributing to the behaviour, factors identified that would have helped to prevent the behavior, self-reported emotional reaction, self-reported ways of managing or "handling" the behavior).



## Results

A total of 468 incidents were documented by 112 NAs. The current analysis focuses on the 409 incidents involving a resident with dementia, reported by 83 NAs across the 11 facilities. NAs reported from 1 to 28 incidents over the 144-hour period with a mean of 4.93 ( $SD = 4.96$ ) (Table 2). Due to the lack of control over distribution we were unable to obtain an accurate denominator. Using the estimate of 679 NAs (full-time, part-time, and casual) provided by the directors, estimated response rates ranged from 8.5% to 30.3% across facilities, with a mean of 17.4%. These are underestimates because the denominator includes NAs who did not receive a diary and those listed as employed but not currently working due to injury, disability, and vacation. Although not unusual for this type of research,<sup>30</sup> these response rates were unexpected given the high return rates of 77% to 95% during instrument development and in our earlier research. To learn about reasons for the lower response rate, we conducted focus groups in five facilities, attended by 74 NAs. Some NAs reported that they had not received a package. A key discovery was that NAs feared that study results would be used against them to “prove” that they were at fault for causing residents’ behaviours, and they were frustrated and angry at what they perceived to be a culture of blaming NAs for these incidents. These findings are reported in an earlier publication.<sup>12</sup>

[insert Table 2 about here]

### Demographic and Employment Characteristics

The mean age of participants was 47.5 years ( $SD = 0.97$ ), with a mean of 14.4 years ( $SD = 0.82$ ) of work experience. The majority were female (96.3%), worked full-time (65.4%), and had completed high school (29.3%), technical school beyond high school (34.1%), or college/some university (24.4%). Over 86% had completed the NA training program required within two years of employment. While 94% had completed PART, only 43.6% rated it as useful or very useful. Almost half of NAs (49.4%) rated their job satisfaction as 4 out of 5, where 5

indicates high satisfaction, although almost half of the NAs (47.6%) reported that working with residents with “aggressive behaviours” had a moderate (4) to large (5) effect on their job satisfaction. The number of times “physically assaulted” at work in the past month was reported as none (11.1%), 1-5 times (58.7%), 6-10 times (11.1%), and more than 10 times (19.0%). NAs reported working under pressure of time “always” (39.0%) or “frequently” (47.6%). Just over 65% had attended an educational session focusing on care of individuals with dementia. Satisfaction with access to such educational programs was rated on a 5-point scale and ranged from not at all satisfied (11.1%) to very satisfied (2 people) with the largest proportion (37.0%) endorsing the midpoint on the scale. Approximately half (52.4%) of the NAs mildly agreed that their current level of knowledge and training had adequately prepared them to care for residents with dementia, with only 12.2% strongly agreeing.

### **Incident Reporting**

The majority of incidents (41.3%) occurred between 6 AM and noon, compared to noon to 6 PM (22.7%), 6 PM to midnight (30.6%) and midnight to 6 AM (5.4%). There was no relationship between number of incidents reported in the last 144 hours and years of work experience ( $r = .11, p = .33$ ). The number of incidents reported in the last 144 hours was significantly correlated with the number of incidents reported in the past month ( $r = .69, p < .0001$ ). In terms of facility characteristics, there was no significant difference in the mean number of incidents reported by NAs employed in facilities with a SCU ( $M = 4.9, SD = 5.3$ ) compared to those with no SCU ( $M = 5.1, SD = 4.0$ ),  $F(1,80) = .016, p = .90$ , and there was no correlation between number of beds in the facility and the mean number of incidents reported ( $r = -.24, p = .47$ ). As shown in Table 3, there were no significant differences in number of incidents reported (in the past 144 hours or in the past month) and any of the education and training variables (highest level of education obtained, completion of the NA training program, and PART).

[insert Table 3 about here]

[insert Figure 1 about here]

Findings regarding specific incidents are shown in Figure 1, including location, activity, type of behaviour, perceived cause of the behaviour, and the NAs' emotional and behavioural responses. The majority of the 409 incidents occurred in residents' rooms (65%) during personal care, including dressing (31%), transferring or positioning (23%), and toileting (15%). The most frequent behaviours were slapping (44%), squeezing (30%), punching or hitting (29%), and shoving or pushing (24%). The most common emotional responses were frustration (30%), "none" or "nothing" (17%), and nervousness or fear (14%). Responses to the open-ended question about the main cause of the behaviour were coded and classified into nine categories: resident's cognitive impairment (34%); resident did not want personal care (22%); resident did not want to be positioned, got out of bed, or be put to bed (8%); resident did not want to lose independence or be redirected (6%); agitation, mood, and pain (all 5%); resident's personality (4%); and other (11%) that included "don't know," physiological factors such as fatigue and being cold, issues related to medications, and the physical environment (noise and crowding). Following the question about the main underlying cause of the behaviour, participants were asked about other factors that may have contributed. Similar causes were reported, including resident cognitive impairment (24%), don't know (16%), resident not wanting care or redirection (total of 15%), physiological factors (9%), and staff approach (6%). Comments in the diaries indicated that resisting or not wanting care was related to the residents' dementia, because the resident did not understand that the NA was trying to help them.

For each incident NAs were asked "How did you handle the situation? What did you do?" Responses to this open-ended question were coded into six categories based on the amount of information provided in the response: continue providing care (40%), explain and/or reassure the resident and continue providing care (26%), ask the resident to stop the behaviour but continue providing care (8%), ask other staff for help while continuing to provide care (6%), leave the

situation and try later (5%), and discontinue the caregiving task (7%). Thus in the majority of incidents (89%) the NAs continued to provide care to the resident.

[insert Figure 2 about here]

Other incident-related measures are shown in bar graphs in Figure 2. Intensity or severity was fairly evenly distributed from mild to intense/severe, but for the majority of incidents (53%) NAs reported that they were not at all optimistic that anything could be done to prevent the behaviour in a similar situation in the future. In rating the extent to which the behaviour was controllable by the resident, the majority of responses were at the “cannot control” end of the scale, with only 11% endorsing a rating of 5 (resident can control). When asked about the extent to which the NAs believed that they themselves were able to control, change, or modify the cause or causes of the behaviour in the incident, 49% rated their own control as 1 out of 5 (cannot control). NAs reported that they could control or modify the cause (rating of 5) in only 3% of incidents. With respect to how distressing the incident was for them, ratings varied from very distressing (9%) to not at all distressing (34%). In 28% of the incidents the NAs responded “yes” to the question “Would anything have helped to prevent this incident from happening?” For these 115 incidents NAs were asked to explain what would have helped. The most frequent response was medication (39%), using a different caregiving approach (24%), not giving care or leaving the resident alone (19%), having more staff or time (11%), and other strategies such as different clothing or changes to the environment.

### **Discussion**

Study findings indicate that NAs are exposed to high levels of combative behaviours, with nearly 90% of participants reporting at least one incident in the past month and nearly 20% reporting more than 10 incidents in that period. Most of the behaviours occurred during personal care and during the morning care period. The NAs attributed most of the behaviours to resident-related factors, particularly dementia or cognitive impairment and not wanting care, as well as

resident agitation, mood, pain, and personality. Participants were not optimistic that anything could be done to prevent future behaviours, or that they personally could control or change the cause of the behaviour. These feelings of hopelessness and powerlessness are not surprising given that most incidents were attributed to stable or nonmodifiable factors, in particular residents' dementia and inability to understand that the NAs are trying to help them. NAs also rated residents' ability to control their behaviour as low.

The NAs in this study continued to provide care despite being subjected to combative behaviours, including being slapped, punched, pinched, and kicked. In the focus groups they explained that it is their job to care for residents and they are also concerned about residents' safety and dignity. For example, they could not leave residents in the tub or lift, or with soiled clothing if they had been incontinent. The incidents triggered various emotional reactions including frustration, fear, anger, and surprise. When asked about the large number of "none" or "nothing" responses to the emotion question, some NAs participating in the focus groups stated that not acknowledging their feelings was necessary in order to stay in a professional role and to continue providing care, where others believed that feeling nothing was impossible.

The event-recording diary method and focus group method used different lenses to study NAs' perceptions of resident behaviours. The diaries were structured around discrete events taking place between the NA and an individual resident, and the NAs attributed the behaviours to resident-related causes, which were perceived as non-modifiable and outside the NAs' control. In the focus groups conducted in these facilities,<sup>9</sup> NAs focused less on the immediate NA-resident interaction and more on the broader context in which care is provided, and how this influences their work and approaches. NAs described organizational-level factors that directly affect their care practices but which they cannot control (e.g., workload, inadequate staffing levels, rigid institutional routines and policies, expectations of supervisors, inadequate dementia care training for all staff). These system-level barriers limit their ability to provide resident-

centred care and increase their risk of exposure to combative behaviours.<sup>12</sup> The causes of the behaviours identified in the diaries were more proximal, whereas those that emerged in the focus groups were more distal to the NAs. However, in both cases the identified factors contributing to the behaviours lay mainly outside the NAs' control. The mixed-method approach led to a more complete picture of the complexity of caring for residents with dementia and helped to identify potential modifiable organizational factors that influence NAs' decision-making, which in turn has an impact on their risk of exposure, quality of worklife, and quality of care for residents.

A limitation of the attribution model for identifying interventions to reduce NA exposure to combative behaviours is that the focus is at the level of the individual, whereas there is growing recognition of the significant role of context in the implementation and sustainability of research and best practices in long-term care settings.<sup>31</sup> Knowledge translation models, such as the Promoting Action on Research Implementation in Health Services model (PARIHS)<sup>32,33</sup> have identified the need to move the focus away from individuals and toward recognition of organizational context as a key determinant of knowledge use in health care settings. The most common response to addressing the challenges of caring for residents with dementia in long-term care has been to provide continuing education programs to staff, but there is little evidence that these traditional education methods have a direct impact on practice.<sup>34,35</sup> In the focus groups, NAs in the study stated that they were aware of many of the best practices in dementia care, but the context in which they work often prevented them from implementing them, thus triggering aggressive behaviour. However they also recognized that they do not always know what to do and that more training in dementia care strategies, especially hands-on approaches, would be helpful. However, this education needs to be provided to all care staff, not just NAs, within a framework of caring and support that includes an assessment of how the work context needs to change to enable all staff to provide quality care. What is needed is a collaborative, inclusive approach, where NAs' input is valued in a team process to identify barriers to person-centred

care, and where there is organizational commitment to implementing solutions. This approach is consistent with a practice development model, which facilitates person-centred care practices by enabling changes in practitioner and team culture.<sup>34</sup> The “culture of blame”<sup>12,26</sup> focused on NAs is a barrier to both reporting incidents and developing team-based management strategies.

As in other studies<sup>18,26,36</sup> lack of time to provide care was identified as an underlying factor contributing to combative behaviours in the current study. Banerjee and colleagues<sup>26</sup> found that NAs in long-term care facilities in three Canadian provinces were almost seven times more likely to experience “violence” on a daily basis compared to those in four Nordic countries, and that working short-staffed was a major contributor. Clearly, addressing staffing issues is a critical component of a strategy to reduce the risk to front-line caregivers and improve care.

### **Limitations**

Determining true response rates was a challenge due to lack of direct contact information for NAs, dependency on facility administrators to distribute study materials, inclusion of staff on leave in the denominator, and long travel distances to study sites that limited our ability to establish a stronger presence in the facilities. There was wide variation in the number of incidents reported within and across the 11 facilities, which may be due to factors such as differences in staffing ratios, resident assignment, resident mix, shifts worked, the physical and social environments, and individual differences in NAs. However, despite the variation in number of incidents reported in the diaries, NAs consistently attributed the behaviour to resident-related factors. Although check boxes were used for as many questions as possible, some diary questions required writing, which may have caused discomfort in some NAs. This factor may have reduced the response rate and led to a bias in the sample toward more highly educated NAs, as supported by the high reported levels of education. Response burden was mentioned in the focus groups, related to the high frequency of combative behaviours. In future research, end-of-shift interviews, via telephone or face-to-face, might be more effective. Data on the number of formal

incident reports filed during the study period were not collected, thus the proportion of incidents in the diary that were formally reported is not known. Underreporting of incidents<sup>1</sup> and inadequate measurement tools are barriers to understanding the true magnitude of this issue, which is important for organizational planning and research purposes. In a follow-up study to the study reported here, we are investigating how NAs define an “incident” and the factors influencing their decision to formally report assaults.

### **Conclusion**

The results of this study support the conclusions from other studies,<sup>1,23</sup> that although combative behaviours can not be completely eliminated, they can be decreased, and should not be tolerated as “part of the job.” The current study findings underscore the need to focus attention on the contextual and organizational-level factors that increase the risk to front-line caregivers within long-term care settings. Many of these risk factors also have implications for the quality of care for residents. Thus, addressing the organizational-level risk factors will support both resident-centred care and improved work life for nursing aides.



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Table 1. Diary questions completed for each incident

Resident's initials and gender
Time of day, day of week, and location where incident occurred
Aggressive Behaviour (check all that apply): slap, shove/push, sexual touch, pull hair, squeeze/hang on tight, kick, bite, spit, scratch, punch/hit/elbow, hit with object, throw object, pinch/grab, other (describe)
What activity was taking place? (check one): bathing, dressing, toileting, intervene in conflict, social activity, feeding, transfer/position, prevent exit/re-direct, other (describe)
For the following 4 items, circle the appropriate number on a scale of 1 to 5:
How intense/severe was this aggressive behaviour? 1 (mild) to 5 (intense/severe)
How optimistic are you that something can be done to prevent this resident from being aggressive in a similar situation in the future? 1 (not at all optimistic) to 5 (very optimistic)
To what extent was this behaviour controllable by the resident? 1 (resident cannot control) to 5 (resident can control)
How distressing was this incident for you? 1 (not at all distressing) to 5 (very distressing)
Why do you think the resident was aggressive in this situation? In your view, what was the <i>main</i> underlying cause of the aggression in this incident? Be as specific as possible.
What <i>other factors</i> may have contributed to the resident's aggression in this incident?
To what extent do you believe that <i>you</i> are able to control/change/modify the cause(s) of the aggression in this incident? (Circle the most appropriate number) on a scale from 1 (not at all) to 5 (a lot). Additional comments (open-ended)
Would anything have helped to prevent this incident from happening? Yes or No. If Yes, please explain:
What emotion did you feel at the time? (your first reaction)
How did you handle the situation (what did you do?)
Does this resident have dementia (e.g., Alzheimer's Disease) or other cognitive impairment? Yes or No
Does this resident reside on a separate dementia unit? Yes or No

Table 2. Summary of incidents by facility

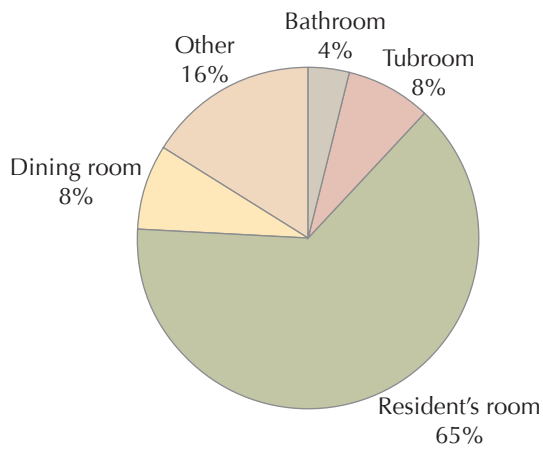
Facility	Estimated # NAs who received a diary	# NAs who completed the diary	Estimated response rate (%)	# NAs who reported incident(s) by resident with dementia	Range of incidents reported	Mean # incidents reported per NA	SD*
1	47	7	14.9	7	1-18	6.71	5.68
2	51	11	21.6	8	2-11	4.88	2.85
3	42	8	19.0	8	2-11	3.88	3.18
4	69	7	10.1	4	3-7	5.25	1.71
5	76	23	30.3	14	1-7	3.43	1.95
6	59	5	8.5	5	1-8	5.20	3.03
7	60	9	15.0	7	1-3	1.71	0.95
8	26	7	26.9	2	11-22	16.50	7.78
9	103	11	10.7	7	1-13	6.86	4.30
10	66	15	22.7	13	1-9	2.15	2.15
11	80	9	11.3	8	1-28	9.50	9.78
<b>All</b>	<b>679</b>	<b>112</b>	<b>17.4</b>	<b>83</b>	<b>1-28</b>	<b>4.93</b>	<b>4.96</b>

A total of 468 incidents were reported by 112 NAs. However this paper focuses on the 409 incidents involving a resident with dementia, reported by 83 NAs. Response rates were computed based on total NAs who participated in the study. \*SD = Standard Deviation

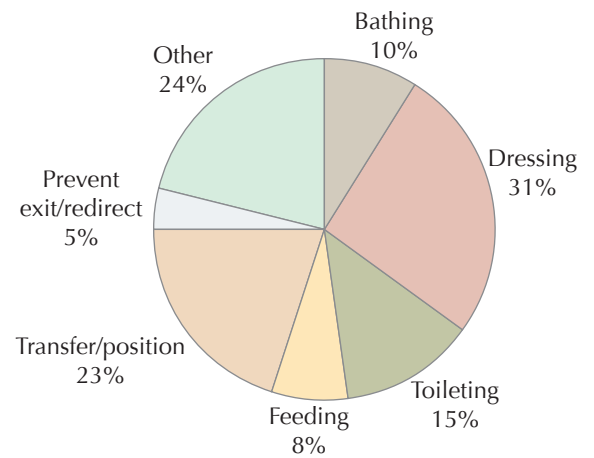
Table 3. Number of incidents by nursing aide education

Education Level	Number of incidents in last month (N=83)*		F value	P value	Number of incidents in last 144 hours (N=83)*		F value	P value
	N (%)	Mean ± SD			N (%)	Mean ± SD		
<b>Highest level of education</b>								
Some high school	2 (3.2)	16.0 ± 19.80	0.87	0.48	6 (7.3)	5.50 ± 6.28	0.18	0.95
Completed high school	18 (28.6)	8.67 ± 23.00			24 (29.3)	4.38 ± 5.78		
Technical training beyond high school	23 (36.5)	8.17 ± 11.10			28 (34.1)	5.39 ± 4.98		
College or some University	16 (25.4)	3.56 ± 3.61			20 (24.4)	5.05 ± 4.16		
University Undergrad degree	4 (6.3)	17.75 ± 22.25			4 (4.9)	4.00 ± 2.94		
<b>Nursing aide diploma program</b>								
Yes	53 (84.1)	6.94 ± 10.42	1.59	0.21	72 (86.7)	4.71 ± 4.31	1.06	0.31
No	10 (15.9)	13.60 ± 30.91			11 (13.3)	6.36 ± 8.18		
<b>Professional Assault Response Training (PART)</b>								
Yes	59 (93.7)	8.41 ± 15.78	0.65	0.42	78 (94.0)	5.01 ± 5.05	0.38	0.54
No	4 (6.3)	2.00 ± 0.82			5 (6.0)	3.60 ± 3.13		

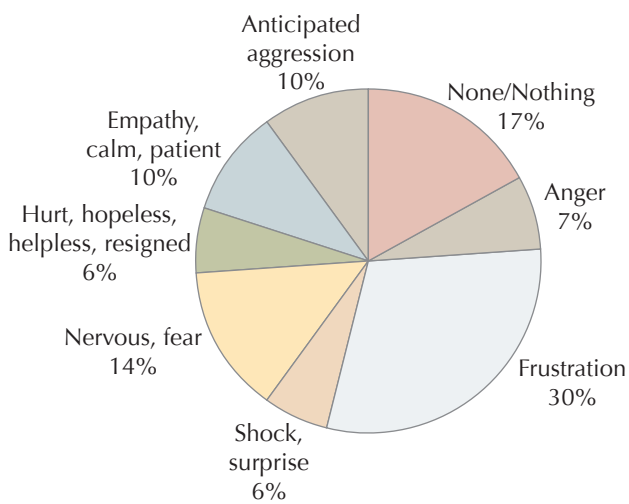
\* For highest level of education, nursing aide diploma program, and PART training, some observations were missing.



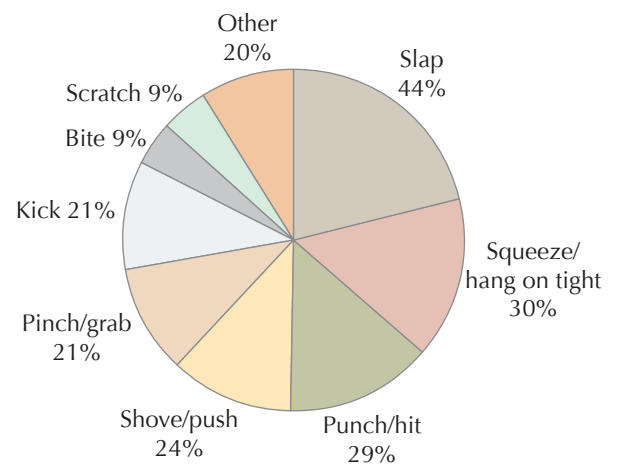
**Location of incident**



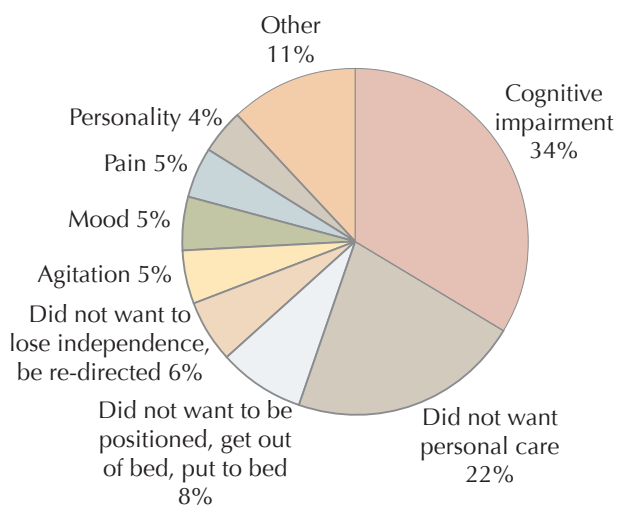
**Activity taking place**



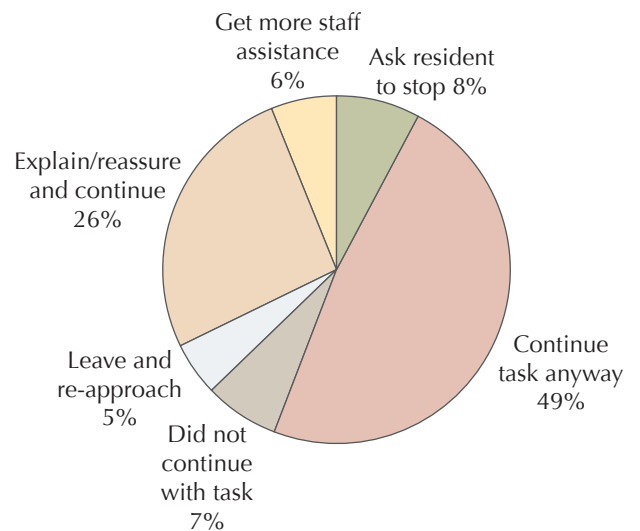
**Emotional reaction**



**Type of behaviour**



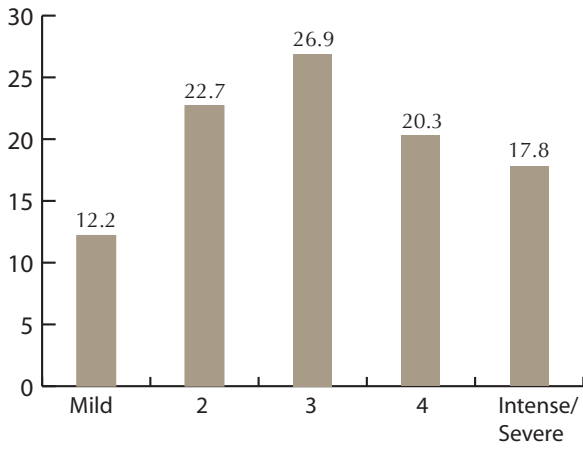
**Perceived cause of the behaviour**



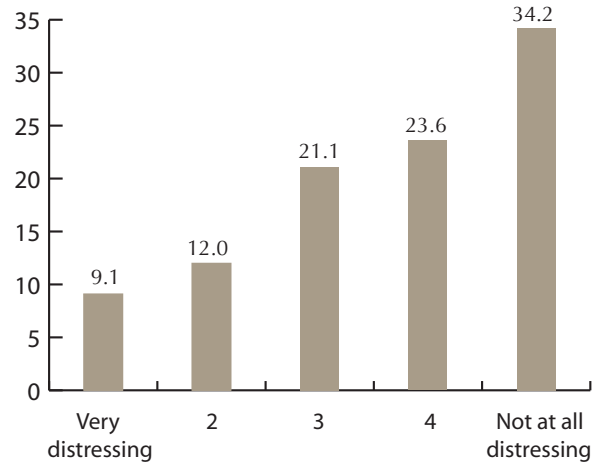
**How they handled it**

Figure 1. Description of the incident (location, type, activity) and NA emotional and behavioural reaction.

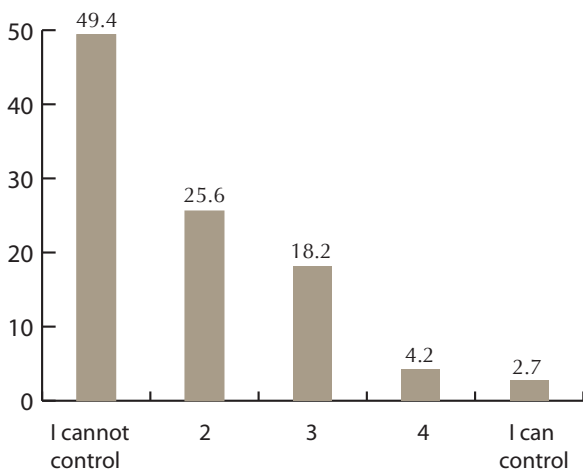




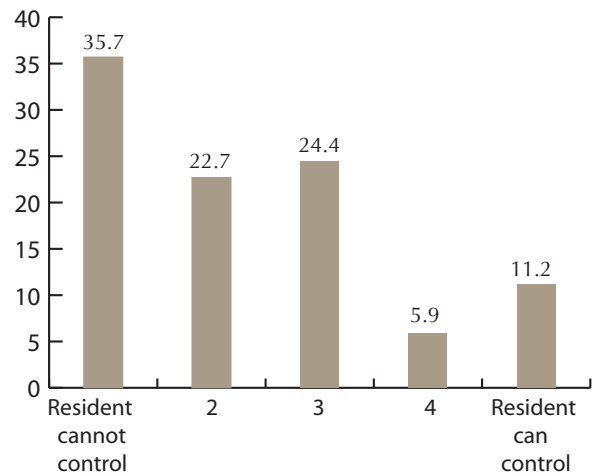
**How intense/severe was this behaviour?**



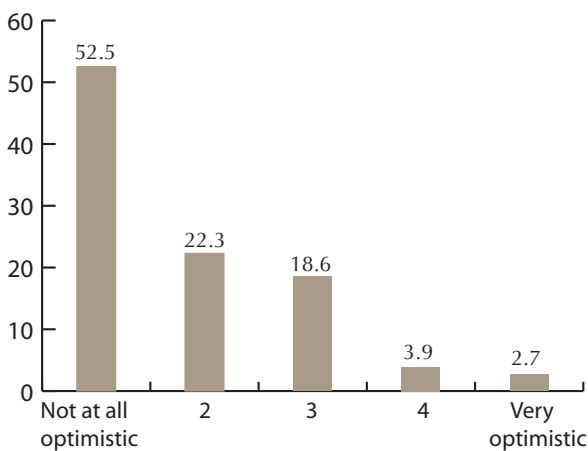
**How distressing was this incident for you?**



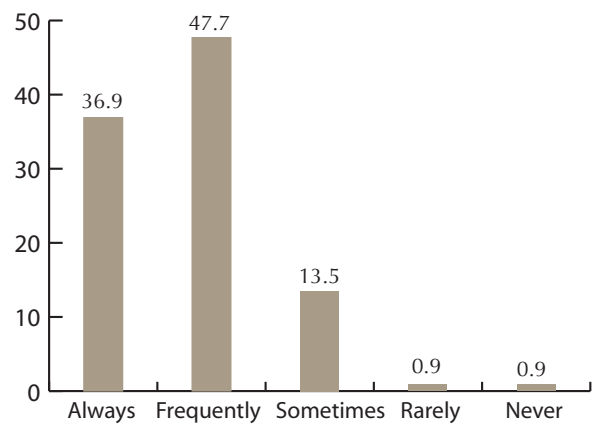
**To what extent were you able to control the cause of the resident's behaviour?**



**To what extent was this behaviour controllable by the resident?**



**How optimistic are you that this behaviour can be prevented?**



**How often do you work under the pressure of time?**

Figure 2. NA ratings of severity, distress, controllability, optimism, and time pressure.