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RELATIONSHIPS OF STRESSORS, STRAIN, AND ANGER TO CAREGIVER ASSAULTS

Donna Gates, EdD, MSPH, MSN, RN
Evelyn Fitzwater, DSN, RN
College of Nursing, University of Cincinnati, Cincinnati, Ohio, USA
Paul Succop, PhD
Department of Environmental Health, College of Medicine, University of Cincinnati, Cincinnati, Ohio, USA

Nursing assistants (NAs) working in nursing homes are at risk for nonfatal workplace violence. The aims of this study were to describe the context in which assaults occur and to identify characteristics of the NAs related to the incidence of assaults. One hundred and thirty eight subjects participated. NAs completed a demographic and employment survey, the Occupational Stress Inventory and the State Trait Anger Expression Inventory-2, and recorded information on an Assault Log for 80 hours of work. The mean number of assaults per NA was 4.69 (range 0–67). Significant relationships were found among incidence of assaults and staffing ratios, age, occupational strain, occupational role stressors, and anger. Results provide new and useful information when planning violence prevention programs for caregivers in nursing homes.

Many employees and employers are dealing with several forms of violence in their workplaces, including harassment, threats, and physical assaults. In particular, increasing violence against healthcare workers prompted the United States Occupational Health and Safety Administration (OSHA) to publish employer guidelines in 1996 (2003) mandating

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Address correspondence to Donna Gates, University of Cincinnati, College of Nursing, 212 Procter Hall M.L. 0038, Cincinnati, OH 45221-0038, USA. E-mail: donna.gates@uc.edu

health care employers to protect their employees from violence perpetrated by patients, families, and visitors.

The Bureau of Labor Statistics (BLS) found that nursing assistants (NAs) in long-term care are the workers most at risk of workplace assault (Bureau of Labor Statistics, 1994, 1998). Traditionally hostile behaviors (verbal and physical) by residents against caregivers were termed "aggressive or problem behaviors" and were not considered "violent acts" since many of the offending residents had dementia and did not intend to harm. However, previous research by the investigators found that many NAs do consider such incidents as "violent," suggesting that the emotional, physical, and financial costs to employees and organizations may be significant (Gates, Fitzwater, & Meyer, 1999).

In a study of 124 residents in four nursing homes, 51% of aggressive behavior was physical, 48% verbal, and 4% sexual (Ryden, Bossenmaier, & McLachlan, 1991). Two focus group studies describing NAs' experiences with violence found that these workers often experienced harassment, threats, and assaults from patients and that the NAs did not receive adequate support from their supervisors related to the violence (Gates et al., 1999; Lusk, 1992). Physical assaults against caregivers by elderly residents occur primarily during basic care activities, such as dressing, changing, bathing, feeding, and turning (Fitzwater & Gates, 2002; Gage & Kingdom, 1995; Hagen & Sayers, 1995). Several investigators found that the incidence of assaults from nursing home residents was highest with those residents with dementia and organic brain syndrome (Colenda & Hamer, 1991; Tardiff & Sweillam, 1979). Because of the degenerative nature of dementia, these patients often exhibit behaviors such as agitation, combativeness, and aggressiveness towards other residents, staff, and family (Cohen & Eisdorfer, 1986). Greater than 50% of nursing home residents are cognitively impaired (Kane, Ouslander, & Abrass, 1994), with Alzheimer's disease (AD) accounting for 50–60% of all dementia cases (Cummings, 1995).

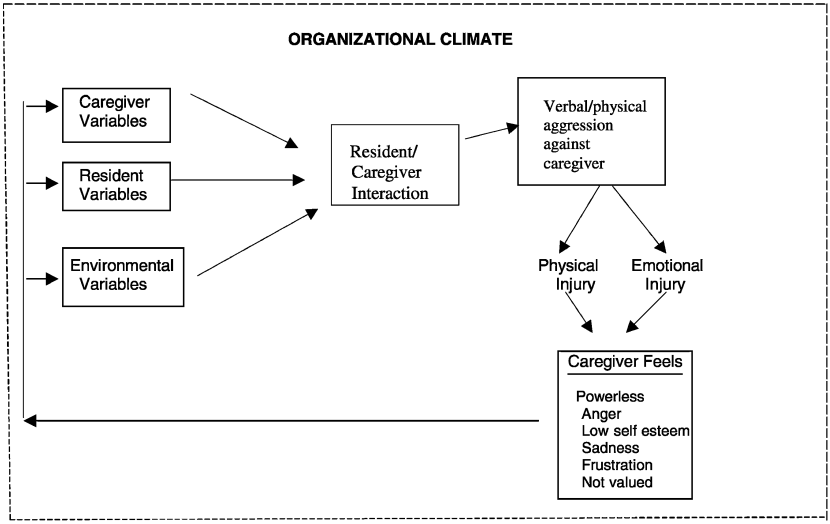
Workplace violence can seriously impact the employer, employees, and clients. Effects can include a variety of financial costs for medical and psychological care, increased absenteeism, property damage, decreased productivity, increased security, litigation, increased workers' compensation, and personnel changes due to burnout and turnover. Studies have found that health care workers who are assaulted experience both short-term and long-term emotional reactions, including anger, sadness, frustration, anxiety, irritability, fear, apathy, self-blame, and helplessness (Fitzwater & Gates, 2002; Hagen & Sayers, 1995; Pillemer & Hudson, 1993). The emotional toll that occurs to caregivers when they are physically abused on a daily basis is certain to have an impact on the quality of care provided to nursing home residents. A secondary effect

is that NAs who are not able to effectively cope with the daily emotional and physical stressors related to resident care are more prone to respond with aggressive and abusive response toward residents (Gates, Fitzwater, Succop, & Matthews, 2002; Pillemer & Moore, 1989). There is a reciprocal relationship between the violence that occurs against the caregiver and the violence that occurs against the resident. Either type of occurrence has the potential to cause the victim to retaliate, thus resulting in two victims of abuse (Pillemer & Bachman-Prehn, 1991).

There are approximately 1,813,665 beds in 16,995 nursing home facilities in the United States (Administration on Aging, 2000). Since the number of nursing home patients is expected to increase dramatically in the near future, efforts are needed now to improve the nursing home environment for both caregivers and residents. Working as an NA in a nursing home is often stressful due to the constant physical and emotional demands of the job. Although NAs provide 70% to 90% of the direct care in nursing homes, scant attention has been paid to the working environment of this occupational group (Wunderlich, Sloan, & Davis, 1996).

CONCEPTUAL MODEL AND HYPOTHESES

A model, developed by Gage and Kingdom (1995), was modified by the authors to describe and study the violence against caregivers in nursing homes. The model (See Figure 1) proposes that the violence that



Note: Adapted from Gage and Kingdom, 1995, p.59

FIGURE 1. Violence against caregivers: A model.

occurs against NAs in nursing homes by residents is multifaceted and emphasizes the importance of characteristics of the caregiver (nursing assistant), patient (resident), and environment (nursing home). The aims of the current project were to describe the physical assaults that occur against NAs from residents in nursing homes and to identify characteristics of the NAs in relation to the incidence of assaults. The following caregiver variables were examined: age, number of residents assigned, duration of employment at the nursing home, previous violence prevention education, NA's anger, occupational role stressors, and occupational strain. The following hypotheses were tested:

H1: The number of residents in the caregiver's assignment will be positively related to incidence of assaults. This was expected to occur for two reasons. First, statistically the odds of being assaulted are likely to increase as the number of patient interactions increase. Second, as workload increases caregiving can become hurried, pressured, and even like an assembly line. Such an approach is more likely to result in an aggressive response from residents, especially those suffering from dementia or other mental health disorders.

H2: The duration of employment as a caregiver in the nursing home will be negatively related to the incidence of assaults. Residents in nursing homes today often require sophisticated nursing care due to their complex medical diagnoses. A common assumption is that quality of care is related to the caregiver's knowledge about the resident's diagnosis, as well as the resident's unique personality and moods, likes and dislikes, and triggers for aggression. The investigators expected that as caregivers became more knowledgeable and familiar with the residents, their ability to prevent agitation, aggression, and assaults would increase. In addition, as residents became more familiar with NAs there would be less chance for confusion and fear, resulting in agitation and aggressive behaviors.

H3: Previous violence prevention training would be negatively related to the incidence of assaults. Violence prevention training provides NAs with both knowledge to understand the causes of agitation and aggression and skills to use in preventing and managing agitation and aggressive behavior.

H4: Occupational role stressors will be positively related to the incidence of assaults. Types of role stressors include role overload, role insufficiency, role ambiguity, role boundary, and role responsibility (See Table 1). As role stressors increase caregivers are more likely to have difficulty concentrating on the best strategies to use with difficult and challenging residents.

TABLE 1. Instruments

Instrument	Data collected
Demographic & Employment Survey	Age, gender, race, years of employment as an NA, experience with physical assaults and training for violence prevention
Occupational Stress Inventory (Osipow, 1998)	
Role Stressors Scales[1]	
Overload (RO)	Extent to which job demands exceed personal and workplace demands
Insufficiency (RI)	Extent to which the employee's training, education, and skills match job
Ambiguity (RA)	Extent to which priorities, expectations, and evaluation criteria are clear
Boundary (RB)	Extent to which employee experiences conflicting demands and loyalties
Responsibility (RR)	Extent to which the employee has or feels responsibility for others
Physical environment	Extent to which the individual is exposed to extreme physical conditions
Personal Strain Scales[2]	
Vocational strain (VS)	Extent to which the individual is having problems in output or negative attitude toward work
Psychological strain (PSY)	Extent of psychological and emotional problems being experienced
Interpersonal strain (IS)	Extent of disruption in interpersonal relationships
Physical strain (PS)	Complaints about physical illness and poor self-care habits
State-Trait Anger Expression[3] Inventory-2 (Spielberger, C, 1999)	
State Anger (SA)	Extent to which the individual is currently experiencing angry feelings
Trait Anger (T-ANG)	Extent to which the individual frequently experiences angry feelings and feels like he or she is treated unfairly by others
The Assault Log (Gates, Fitzwater, & Deets, 2003)	A checklist the caregiver carries to keep a record of all assaults encountered by residents. Describes context in which assaults occurs, including resident's diagnosis, type of assault, caregiving activity being performed when assault occurred, and whether an injury occurred. NAs also record the number of residents assigned for that shift.

[1]Coefficiant alphas: RO .78, RI .85, RA .79, RB .72, RR .75, PE .89.

[2]Coefficient alphas: VS .75, PSY. 86, IS .75, PS .85.

[3]Coefficient alphas: SA normal adult females .92; males .94. T-ANG normal adult females .84; males .86.

H5: Occupational strain will be positively related to the incidence of assaults. Types of occupational strain include vocational strain, interpersonal strain, psychological strain, and physical strain (See Table 1). Occupational strain can occur when caregivers are exposed to frequent and severe stressors, resulting in negative stress outcomes. As occupational strain increases, the approach and care to residents are likely to be negatively affected.

H6: Caregiver state and trait anger will be positively associated with the incidence of assault. In an earlier focus group study (Gates et al., 1999) we perceived that the NAs were angry and thus included the State Trait Anger Inventory (STAXI) in this study to explore the relationship between anger and assaults (Spielberger, 1999). Anger is a subjective emotional state and this emotional state may give rise to aggression, which is a verbal or physical act of violence. Spielberger (1999) states that whereas persons with high State Anger are currently experiencing relatively intense but transient angry feelings, persons with high Trait Anger have a more chronic anger, frequently experiencing angry feelings and often believing that they are treated unfairly by others. Spielberger's Trait Anger scales correlate significantly with Hostility Scales, including the Buss-Durkee Hostility Inventory and the Minnesota Multiphasic Personality Inventory (Spielberger, 1999). Angry persons are often more frustrated and such frustration is likely to result in how and when care is delivered. For example, frustrated and hostile people might be loud, their movements might be rougher, or they might disconnect from and neglect their residents. Hostile caregivers might have a tendency toward physical abuse, depending on their propensity to aggression and their ability to cope with their intense feelings. Studies have found that nurses become angry when they feel they are treated unfairly, unjustly accused, blocked in task completion, and when experiencing fear, anxiety, and frustration (Smith & Hart, 1994).

PROTOCOL

Subjects

Six nursing homes were randomly selected from all nursing homes with more than 100 beds in one Ohio county. The homes were similar in the following characteristics: (1) number of residents ranged from 100

to 156; (2) percent of residents with dementia ranged from 60% to 76%; and (3) number of NA positions ranged from 28–37 and nurses numbered between 14–22. Whereas five of the homes housed primarily white residents, one home was located in an African-American neighborhood and housed primarily African-American residents. Selection criteria for the NAs included the following: (1) full-time employment at the facility; (2) caregiving activities (i.e., bathing, feeding) provided daily; and (3) did not work for an outside employment agency. All nursing assistants who met the selection criteria were asked to participate. One hundred thirty-eight subjects or 63% of all full-time NAs volunteered to participate in the study. It was not possible to determine if volunteers for this study were different than those who did not participate.

Ninety-four percent of the subjects were women, 67% were African-American, 25% Caucasion, and 6% were Asian. The mean age was 35.98 years ($n = 137$, range = 18–65, $SD = 11.10$) and the mean years of education for the subjects was 11.76 years ($n = 134$, range = 1–16, $SD = 1.74$).

Methods

Subjects completed the following questionnaires: (1) Demographic and Employment Questionnaire, (2) Occupational Stress Inventory (Osipow, 1999), and (3) State-Trait Anger Expression Inventory-2 (Spielberger, 1999). The Demographic and Employment Questionnaire and the Assault Log were previously developed by the investigators and assessed for face and content validity using the expertise of nurses and NAs. The Assault Log was also piloted for ease of use by NAs in nursing homes (Gates, Fitzwater, & Deets, 2003). A box, envelopes, and extra assault logs were placed at each of the six nursing homes. NAs were instructed to place a completed log each day in an envelope, seal it, and place it in the box. The project director went daily to each home to retrieve the completed logs. On the Assault Log the NA provided information describing the hours worked and the number of residents cared for during that shift. The NAs recorded on the Assault Log the following information each time they were physically assaulted: (a) diagnosis of the resident who assaulted them, (b) type of assault, (c) caregiving activity being provided when the assault occurred, and (d) whether an injury occurred as a result of the assault. The NAs also completed a log on those days when no assaults occurred. See Table 1 for description of the instruments, including psychometrics for the Occupational Stress Inventory and State-Trait Anger Inventory-2.

Statistical Methods

Items on the Demographic and Employment Questionnaire were tabulated to describe characteristics of the participants and their employment. The self-report items included the following: age, gender, race, violence prevention education at current and previous job, duration of employment at current job, and frequency of assaults by residents. Scores were computed for the six OSI Role Stressor questionnaires, the four OSI Strain questionnaires, and the major STAXI scales, Trait Anger and State Anger.

The Assault Log data were used to determine the frequency of assaults during 80 hours of work and to describe the types of assaults and caregiving activities during which assaults occurred. The NAs also recorded on the log the number of residents they were assigned to that day. The "number of residents" was examined in relationship to the incidence of assaults. A correlation was calculated between the number of assaults recorded by NAs on the logs and their responses to the Likert item on the Demographic and Employment Questionnaire asking, "how often are you assaulted by residents." The number of assaults correlated significantly ($r = .32$; $p = .0002$) with the Likert response, indicating validity of the information on the Assault Logs.

We compared those NAs who were assaulted at least once during the 80 hours to those NAs who recorded no assaults. T-tests were done to examine differences in age, duration of employment, OSI scores, and STAXI scores. Poisson regression was done to identify variables that predicted assaults. Instead of traditional regression that assumes a symmetric distribution, the Poisson regression is used for estimating models for count data, such as number of assaults (Kleinbaum, Kupper, Muller, & Nizam, 1998). The variables that were entered into the regression included the following: age, duration of employment, number of residents, previous training, current training, OSI scores, and STAXI scores.

RESULTS

The mean number of assaults for the six nursing homes ranged from 1.57 to 8.42, even though the homes were all located in the same geographical county and were similar in size, type of residents, and staff. For the 138 subjects there were a total of 624 assaults; these assaults were experienced by 94 NAs. There were 44 NAs (29%) who did not encounter any assaults during the ten working days. The mean number of assaults for all NAs was 4.52 and 6.64 for those NAs who were assaulted at least once. The number of assaults per caregiver during the

TABLE 2. Percent of Total Assaults by Assault Types

Type of assault	Percent
Hitting or punching	51
Grabbing, pinching, or pulling hair	40
Kicking	27
Scratching or biting	23
Spitting	11
Throwing or hitting with object	9

Note: The percentages do not add up to 100% since many assaults included more than one type.

80 hours ranged from zero to 64. The types of assaults and the caregiving activities being performed while assaulted are shown in Tables 2 and 3.

Of the 624 assaults, the most common primary diagnoses for the residents were dementia or Alzheimer's disease (AD) (87%) and cerebrovascular accident (6.1%). There were 615 assaults with completed injury information; for these assaults 31(5%) resulted in an injury. Unfortunately data were not collected as to the nature of the injury, whether medical attention was received, or whether there was time off work related to the injury.

Results from the regression analysis found the following variables to be positively related to the incidence of assaults: age, number of residents assigned, state and trait anger, and role stressors: insufficiency and ambiguity (Table 4). Duration of employment and previous training

TABLE 3. Caregiving Activities when Assaulted

Type of caregiving	Percent
Dressing or changing	43
Turning or transferring	26
Bathing	19
Feeding	12
Toileting	9
Other	9

Note: The percentages do not add up to 100 since assault incidents included more than one type of activity.

TABLE 4. Poisson Regression Model for Assaults

Variable	Degrees of freedom	Estimate	Standard error	Chi square	*P*
Intercept	1	−1.9716	0.5694	11.988	0.0005
Number of residents	1	0.0039	0.0008	21.744	0.0001
Age	1	0.0452	0.0049	86.599	0.0001
State anger	1	0.0217	0.0047	22.475	0.0001
Trait anger	1	0.0097	0.0037	6.785	0.0092
Role insufficiency	1	0.0132	0.0061	4.68	0.0305
Role ambiguity	1	0.0113	0.0044	6.644	0.0099

(current facility or any previous violence prevention training) were not related to the number of assaults. The differences between those NAs who had no assaults and those NAs that experienced at least one assault were also analyzed using T-tests (Table 5). Variables that were significantly different between the two groups included the following: age (assaulted group was younger), vocational strain (assaulted group was higher), physical strain (assaulted group was higher), state anger (assaulted group was higher), and trait anger (assaulted group was higher). Duration of employment was not found to be significantly different between the two groups. Thus hypotheses 1, 4, 5, and 6 were supported by the data analysis and hypotheses 2 and 3 were not supported.

TABLE 5. T-test Comparing Assaulted Group with Nonassaulted Group

Variable	Group	*N*	Mean	Standard deviation	Range	*P*
NA age	No assaults	43	39.7	12.55	18–65	0.003
	>0 assaults	94	34.27	9.99	18–61	
Duration of employment	No assault	41	4.66	6.22	.005–23	0.242
	>0 assault	91	3.91	5.51	.019–29	
Vocational strain	No assaults	44	48.75	12.53	34–81	0.035
	>0 assaults	94	52.25	9.38	34–75	
Physical strain	No assaults	44	48.48	10.46	34–74	0.005
	>0 assaults	94	53.44	10.41	34–79	
State anger	No assaults	44	45.27	2.02	44–52	0.004
	>0 assaults	94	48.73	8.49	44–80	
Trait anger	No assaults	44	44.95	7.95	34–62	0.005
	>0 assaults	94	49.64	10.82	34–78	

DISCUSSION

Study results support previous studies that physical assaults against NAs working in nursing homes are common and that the majority of these assaults occur with residents who have a primary diagnosis of dementia or AD. Care for residents with dementia is challenging and requires skills in mental health and behavior management (Kane, 1999). Residents with dementia are often unable to communicate their needs due to declining abilities, which leads to frustration and aggressive behavior. It was found that 93% of nursing home residents with AD exhibited some type of agitation at least once a week (Cohen-Mansfield, Marx, & Rosenthal, 1989). Noxious stimuli such as noise, crowding, lack of personal space, and loss of environmental control will often trigger aggressive behavior and frequently the aggressive behavior will be unpredictable (Munns & Nolan, 1991). Studies indicate that most NAs receive no formal training in mental health behavioral management techniques (Meunier & Holmes, 1987; Phillips & Baldwin, 1997; Roper, Shapira, & Beck, 2001).

Most of the assaults in this study occurred during basic care activities such as dressing, turning, and bathing (Table 3), supporting findings from other studies (Fitzwater & Gates, 2002; Gage & Kingdom, 1995; Hagen & Sayers, 1995). The findings that offer new information regarding assaults against these caregivers are discussed below.

The mean number of assaults for the six nursing homes ranged greatly from 1.57 to 8.42. This same difference was seen in an earlier pilot study by Fitzwater and Gates (2002) even though the nursing homes also appeared to be similar. Studies are needed to examine whether organizational characteristics, such as teamwork, leadership, workload, work schedules, policies, procedures, and culture are related to the incidence of assault. In 80 hours of work time there were 31 injuries that resulted from assaults in the six nursing homes. Unfortunately specific information regarding the type of assault and the outcomes related to the assaults were not collected. These results support the need to study the root causes of these injuries and to develop prevention strategies.

Workload, Training, and Assaults

The frequency of assaults increased as the number of residents assigned increased. This might be due simply to the statistical fact that an increase in the number of interactions with residents is likely to result in more chances for assault. The relationship may also indicate that

NAs are more apt to deliver care in a more hurried and time-pressured approach with an increased number of residents. Regardless of the reason, assaults against caregivers contribute to a negative work environment and such environments are likely to impact the residents' care. Most long-term care experts believe that one of the greatest problems plaguing nursing homes is the staffing issue, with quality of care being an important outcome.

Previous violence prevention training at the current facility or previous facility was not related to the incidence of assaults. It is likely that violence prevention training in nursing homes is not regarded as important as the training that is required for licensing and certification. Thus, when such training is offered it is often minimal in length and scope. The content of many training sessions is didactic and focuses primarily on the factors that increase a resident's agitation and aggressive behavior and how to recognize when a resident is agitated or upset (Gates et al., 1999). Typically violence prevention classes do not discuss interventions to prevent residents from becoming agitated and how to decrease the resident's agitation or aggressive behavior once it occurs. In a previous study by the investigators (Gates, Fitzwater, Tellintello, Succop, & Sommers, 2002) NAs felt the most knowledgeable and confident in their ability to recognize when a resident is agitated or becoming aggressive and the least knowledgeable and confident about how to keep residents from becoming agitated or aggressive and how to decrease a resident's agitation or aggressive behavior. Skills to prevent and manage agitation and aggressive behavior require a higher level of critical thinking skills; teaching these skills requires more of an education versus training approach. NAs need the opportunity to learn and practice these skills, using case studies or role-plays that allow them to develop problem-solving methods to handle a variety of caregiving situations (Gates, Fitzwater, Tellintello et al., 2002). In addition, violence prevention education should include content related to the feelings and emotions aroused when NAs are verbally and physically abused and how such feelings might affect the care they provide to their residents. Roper, Shapira, and Beck (2001) found that those caregivers who personalized the illness or identified with the resident with AD reported feelings of helplessness, hopelessness, ineffectiveness, and dissatisfaction with their caregiving. NAs who viewed the aggressive behaviors as part of the disease process felt confident and satisfied in their caregiving. The authors concluded that caregivers who feel helpless and hopeless in their caring for aggressive residents could benefit by reframing their perceptions of the resident with AD.

Duration of Employment, Age, and Assaults

The investigators had hypothesized that as caregivers became more knowledgeable and familiar with the residents, their skills to prevent agitation and aggression would increase. However, the length of time a NA worked in the current nursing home was not related to the number of assaults experienced by the NAs. The results support other studies that found NAs do not have the knowledge to work with residents experiencing dementia regardless of years of experience on the job (Meunier & Holmes, 1987; Smith, Buckwalter, & Garand, 1994). It appears that workload and the caregiver variables of age, anger, stress, and strain (see below) are more important in predicting assaults than duration of employment at the nursing home.

There was a significant negative relationship between the age of the caregiver and the frequency of assaults. A similar relationship remained when comparing the assaulted NA group with those who were not assaulted during the 80 hours of work. A possible explanation for the relationship between age and frequency of assaults is that the older worker may be more patient or empathetic during caregiving activities. Older NAs may provide care at a slower pace or be more adaptable with residents. A significant relationship has been found between the NA's age and the use of positive coping strategies when dealing with difficult residents (Fitzwater, Gates, Tellintello, Succop, & Sommers, 2003). As age increased NAs used more approach than avoidance coping. It would be beneficial to examine the caregiving and coping skills of older NAs to identify variables that directly influence the aggression cycle. Such information would be important when teaching caregivers how to prevent agitation, aggression, and assaults.

Occupational Role Stressors, Strain, and Assaults

Study results indicate that there is a positive relationship between frequency of assaults and two of the occupational role stressors: role ambiguity and role insufficiency. Role ambiguity measures the extent to which the individual's priorities, expectations, and evaluation criteria are clear to the worker (Osipow, 1998). Workers with high role ambiguity may report that they are experiencing conflicting demands from supervisors. Role insufficiency measures the extent to which the individual's training, education, skills, and experience are appropriate to job requirements (Osipow, 1998). Workers with high role insufficiency may report that their job has little future or that their needs for recognition

or success are not being met. NAs in nursing homes often experience situations in which they need to deal with many demands from residents, families, and supervisors at the same time. In addition, these NAs, who have minimal education, are caring for very complicated and challenging residents. NAs with high role ambiguity may feel that their work is unappreciated and unrecognized by others. These work stressors, along with extremely heavy workloads, are likely to impact the caregivers' ability to concentrate on the best strategies to use in caring for difficult and demanding residents.

Those in the assaulted group scored significantly higher on the vocational strain and physical strain scales. Osipow (1998) describes persons with vocational strain as persons who may report poor attitudes toward their work, including dread, boredom, and lack of interest. They also may report that they make errors in their work, have accidents, that the quality of their work is suffering, and that they may be experiencing concentration problems and absenteeism (Burns, Hutt, & Weidner, 1993; Jex et al., 1992; Lindstrom, 1992; Revicki & May, 1989; Revicki, Whitley, Gallery, & Allison, 1993; Terry, Neilsen, & Perchard, 1993). Persons who score high on physical strain may report frequent worries about their health as well as having a number of physical symptoms such as colds, aches and pains, stomach aches, and heart palpitations (National Institute for Occupational Health and Safety, 1999; Bongers, de Winter, Kompier, & Hildebrandt, 1993; Burns et al., 1993; Hendrix, Ovalle, & Troxler, 1985; Hendrix, Summers, Leap, & Steel, 1995; Hurrel, Nelson, & Simmons, 1998; Lindstrom, Leino, Seitsamo, & Torsila, 1997; Schnall, Belkic, Landsbergis, & Baker, 2000; Theorell, Ahlberg-Hulten, Jodko, & Sigaala, 1993). These persons also may state that they overuse alcohol or drugs, and be experiencing sleep disturbances or are feeling lethargic or apathetic (Burns et al., 1993; Jex et al., 1992; Lindstrom, 1992; Revicki & May, 1989; Revicki et al., 1993; Terry et al., 1993). What is not known is whether the assaults incurred frequently by these individuals are part of the reason why these individuals are experiencing occupational strain or whether their strain is affecting the care they are providing, thus resulting in assaults.

Occupational strain has been shown to be associated with burnout (Osipow, 1999), which is described by Maslach, Jackson, and Leiter (1996) as a condition of emotional exhaustion, depersonalization, and reduced personal accomplishment. Burnout results when a motivated, conscientious, and committed employee loses joy in providing service to others. Burnout usually affects those motivated and committed persons who enter a profession such as nursing, teaching, and counseling, with a strong desire to help and care for others. Employees

with burnout suffer from a vast array of physical and emotional symptoms. Signs of burnout in an organization include low morale, high absenteeism, tardiness, increased turnover, increased accidents, and decreased job performance (Maslach, Jackson, & Leiter, 1996). It has been estimated that the cost to businesses related to burned out employees is between $150 and $180 billion dollars a year (Miller, 1994). The turnover rate in U.S. nursing homes ranges from 25% to 150% (American Health Care Association, 2002). It is estimated that it costs nursing homes $7,000 to replace a registered nurse and over $2,200 to replace a nurse aide (Caudill & Patrick, 1991; Cohen-Mansfield, 1997). A high turnover rate in healthcare compromises the continuity of care and is costly for the nursing home in terms of hiring, training, and productivity. Administrators should examine ways to decrease staff stress using innovative models of care delivery, promoting teamwork, providing control and emotional support, and providing adequate training and education.

Anger and Assaults

The relationship between anger and incidence of assaults against NAs in nursing homes is a new but not surprising finding. As described earlier, anger is a subjective emotional state that may give rise to aggression, which includes verbal or physical acts of violence. Both state and trait anger were positively related to the incidence of assault. Due to the cross-sectional design of this study it is not possible to determine the causal nature between anger and assaults; angry NAs might be more prone to being assaulted or assaulted NAs might be more prone to having adverse emotions, such as anger. The physical violence that occurs in nursing homes is complex and includes characteristics of the caregiver, environment, and resident. Some NAs have angry or hostile personalities, whereas others may be angry on particular workdays due to situations in their personal lives or because of various work conditions. In addition, NAs may take care of residents who are angry or frustrated and may be suffering from dementia or mental health disorders. The violence between resident and caregiver can be viewed as a reciprocal process where assaults against the caregiver may result in a angry caregiver retaliating with verbal or physical violence. Likewise, a resident may respond to an aggressive or abusive caregiver by hitting the caregiver. An angry caregiver who lacks sufficient coping and problem solving skills is likely to have difficulty handling these challenging situations.

Interventions should include strategies to help NAs recognize how their anger affects their caregiving skills and how to cope with their anger toward residents who are verbally and physically violent toward them. Interventions also are needed to support NAs when they are assaulted by residents, and to teach them coping strategies to use in handling emotions due to the violence.

Study Limitations

The major limitation of this study is its cross-sectional design, making it impossible to determine the causal relationships among assaults and anger and strain. It cannot be determined whether angry or strained caregivers are more prone to having aggressive interactions at work or if being assaulted leads to anger and strain. Longitudinal research is needed to identify the nature of these relationships so that appropriate interventions can be developed and evaluated. Since data were based on self-report, response bias is a possible limitation. The validity of the data was increased by using the following strategies: (1) investigator was present during completion of surveys, (2) Assault Logs were assessed daily for accuracy and completeness, and (3) confidentiality was used with all instruments; no personal identifiers were included.

SUMMARY

Violence research, and in particular violence prevention research, in nursing homes is just beginning to be done. Because many nursing home residents are demented, many administrators, supervisors, and caregivers believe that violence from residents is a normal and expected part of the job. However, recent studies suggest that many NAs identify the physical, verbal, and sexual aggression from nursing home residents as violence, whether it was intentional or not.

Assaults against NAs in nursing homes are common; causes of assaults include variables related to the NAs, residents, and workplaces. This study examined the relationships between assaults and the NAs' characteristics, including demographics, and employment characteristics. Although this study provides new information about the relationships between characteristics of the NA and incidence of assaults, much more work needs be done to determine how characteristics of the NAs, workplaces, and residents are related to the incidence of assaults. It is also important to examine the temporal relationship among anger,

strain, and assaults to identify their causal association. Such information is needed to plan and implement effective intervention for reducing the incidence of assault and improve the well-being of the residents and the NAs working in long-term care.

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