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Aggression challenges and burdens care- givers face when working in nursing homes. The research questions in this review were: (1) what types of residents' aggressive behavior do caregivers experience in nursing homes and how often? (2) In what situations does aggressive behavior occur? (3) What strategies do caregivers employ to manage aggressive behavior? Twenty one publications in English and/or German from 1996 to 2006 were identified by search strategies conducted in Med- line, CINAHL, PsycINFO, and supplemented by screening citations, references, and unpublished manuscripts. Results show that all types of aggressive behavior occur in nursing homes with verbal and physical aggressive behavior combined. Personal care of the residents was the most frequent context in which aggressive behavior occurs. Strategies for pre- venting and dealing with aggressive behavior used by caregivers ranged from behavioral strategies aiming to prevent aggression, to medical treatment, or following written institutional guidelines for reducing aggressive behavior. Some care providers demonstrated predominantly positive and others predominantly negative strategies. Furthermore, there was a lack of information about ''triggering'' factors and interactive events during personal care in the referenced publications. (Geriatr Nurs 2009;30:174-187)

Aggressive behavior of residents continues to challenge and burden caregivers working in nursing homes [1,2]. Working in a nursing home or long-term care facility is associated with a high risk of experiencing aggression [3].Studies show that aggressive behavior is more likely to occur among older people with cognitive impairment than among those with no cognitive impairment [2,4,5] although cognitively intact residents also threaten or assault the caregivers [6]. Irrespective of whether demented residents can be held responsible for their aggressive behavior, many gerontological nurses find that physical or verbal attacks by an elderly person they are giving nursing care to is one of the most difficult, emotionally distressing, and potentially dangerous aspects of their work [7], often resulting in feelings of powerlessness, sadness, anger, and ineffectiveness [8].

Some studies have investigated the prevalence of aggression and associated factors in nursing homes, but it is probable that nursing home residents' aggressive behavior often goes underreported in both prevalence measures and nursing documentation. Possible causes for underreporting are a lack of competence to cope with aggressive behavior, feelings of failure, or the assumption that aggressive behavior is a common feature in the care of the elderly, especially those with psychological disturbance [1,4,9,10]. Psychological disturbances and other illnesses in the elderly may lead to aggressive behavior irrespective of situational factors. However, because such illness processes can be influenced only indirectly by nursing

interventions, this literature review focuses on situations in which aggressive resident behavior occurs and nurses can potentially influence [11,12].

The aim of this review is to summarize re- search-based facts about aggression in nursing homes. The main questions were as follows: (1) What types of residents' aggressive behavior do caregivers experience in nursing homes and how often? (2) In which situations does nursing home residents' aggressive behavior occur? (3) What strategies do caregivers employ to deal with aggressive behavior?

For the purpose of this literature review, the following definition was used: Aggressive behavior refers to a non-accidental overt act involving the delivery of noxious stimuli to (but not necessarily aimed at) an object or toward the self or others [13]. Aggressive behavior may include verbal or physical harm or threats to other persons [14]. Because the term ''nursing home'' is not clearly defined in the literature, a broad range of geriatric long-term care settings, such as retirement homes, skilled nursing facilities, or psychogeriatric wards were considered.

Methods

The search for relevant articles involved computer searches of MEDLINE (PubMed), Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PsychINFO using, when appropriate, terms (Table 1). Additionally, citations and references in journal articles, references suggested by experts in the field, and fugitive literature were screened.

Table 1: Search Strategy and Results

Source	**Hits**	**Initial selection***	**Final selection****
MEDLINE	109	54	13
CINAHL	64	11	4
PsychINFO	39	3	0
Reference from colleagues	2	2	2
Unpublished master's thesis	2	2	2
Total publications	216	72	21

Keywords Used: (aggression OR violence OR patient assault OR disruptive behavior) AND (nursing homes)
Limits: Enter Date: 1996 to 2006, only items with abstracts, only those in English and German
**Based on reading abstracts after elimination of double hits.*
***Based on critical appraisal of the publications.*

The search was limited to articles with abstracts in German or English and published from 1996 to December 2006. After an initial screening of 72 publications by the first author, the following publications were excluded: (1) those regarding Veterans Health administrations, which are comparable to acute care settings be- cause the residents tend to have psychiatric diagnoses; (2) those in which the research results could not clearly be assigned to aggressive behavior by residents toward caregivers (e.g., research about elder abuse and neglect); (3)

those that investigated associations between the illness process (e.g., of dementia) and the occurrence of aggressive behavior without further description of the situation or context in whcich aggressive behavior occurs; and (4) those that were not research based. The remaining 21 articles were rated by the first and the second authors using criteria for the judgment of quantitative and qualitative research reports [15]. Each criterion -12 criteria for quantitative and 10 criteria for qualitative publications- was rated as *not fulfilled* (0 points) or *fulfilled* (1 point). A cutoff of 7 points for quantitative and 6 points for qualitative studies was defined. Seven to 8 points for quantitative and 6 points for qualitative studies was defined. Seven to 8 points for quantitative and 6 to 7 for qualitative studies were taken to indicate that the study has adequate, 9-10 points (for qualitative studies 8-9 points) a good, and 11-12 points (10 points for qualitative studies) a very good research quality (Table 2) [16].

The interrater reliability was calculated by the AC1 statistic [16]. This statistical measure of interrater reliability avoids the problem of instability accruing form differences in marginal probabilities between raters as can occur, for example, with the Kappa statistic [16].

Results

Methodology and Study Design

Thirteen publications based on a quantitative and 8 on qualitative design (Table 3) were analyzed. The most frequently used quantitative method was a retrospective cross-sectional investigation or survey, with only 2 publications using a prospective approach. One publication was an observational study, and 7 of 13 publications provided information about the validity, reliability, or both of the instruments used.

Of the 8 qualitative publications, 2 employed a phenomenological hermeneutic approach, 1 used the grounded theory methodology, and 1 was an ethnographic investigation. Four qualitative publications gave only minor information regarding the methodology, and 4 publications contained concrete information about trustworthiness of the methodology. Despite certain shortcomings and limitations, all 21 publications achieved at least 7 points for quantitative and 6 points for qualitative studies regarding research quality. Interrater reliability using the AC1 measure over all items was 0.93, with ratings at the item level ranging from 0.55 to 1.0. We can therefore consider the interrater reliability as measured by the AC1 measure as satisfactory to very good.

Table 2: Criteria for Critical Appraisal of Research Quality

Criteria	Assessment Critique (Yes 5 1, No 5 0)
Research aim 1. Are purpose statements or research questions clearly formulated?	
Design 2. Does the research question correspond to the design actually used? 3. Are the concepts of key variables under study clearly defined? 4. Does the design have major flaws? (Change points: yes 5 0, no 5 1)	
Sample 5. Are the characteristics of the population adequate? 6. Is the sample size adequate? 7. Was the response rate sufficient? (Not applicable to qualitative publications)	
Instrument 8. Was the instrument adequately pretested? (Not applicable to qualitative publications) 9. Are information about validity and reliability (or trustworthiness) described?	
Data analysis 10. Was an appropriate statistical/analytic method used?	
Interpretation of the findings 11. Are interpretations consistent with the results? 12. Are the stated implications appropriate given the results?	

Description of Aggressive Behavior

The terms “aggression” or “aggressive behavior” were used in 12 of the 21 reviewed publications. The other publications used terms such as “disruptive” or “assaulting behavior”, “violence” or “violent incidents”, “behavioral symptoms, “problem behaviors, or “agitation”. Twelve publications contain an explicit definition of terms such as aggressive behavior or assaulting behavior, and in 5 other studies, the term was not described but operationalized in the instrument. Four qualitative studies provided no definition of aggressive behavior because the definition was developed during the interviews by the study participants. The descriptions of aggressive behavior and all other terms used fall into 2 main categories: 1) verbal aggression, such as yelling, humiliation, or threatening, and 2) physical aggression, such as, kicking, punching, hitting, and scratching.

Prevalence and Types of Aggressive Behavior

The prevalence of aggressive behavior was prospectively or retrospectively measured in 13 quantitative publications using various instruments. The articles report large variance in the prevalence rates of aggression ranging from 1.2 incidents per day or 1–4 incidents per year. These differences probably accrue from the use of different instruments and study designs. It is therefore impossible to name the exact prevalence rates of aggression (Table 4).

Different types of aggressive behavior are reported in 12 quantitative and 4 qualitative studies. The instruments used to investigate types of aggressive behavior in nursing homes also vary considerably.

Two researchers used the Staff Observation Aggression Scale Revised (SOAS-R) and described the occurrence and prevalence of verbal aggression and physical attacks [17,18]. Three other studies used the Cohen-Mansfield Agitation Inventory (CMAI) and also described verbal and physical aggression [19-21]. The other quantitative studies used various instruments with varying information on their development.

The types of verbal aggression encompass shouting angrily, mild insults, threats of violence [17-22], verbal aggressiveness and agitation [23], as well as swearing, insulting, threatening, or verbal sexual harassment [24]. The types of physical aggression were swings and misses, grabbing at clothes, causing bruises and welts [22], striking, kicking, pulling hair, spitting, and throwing things [17,18,22,24-26]. Some studies describe only physical aggression, physical assaults, or physical agitation [27,28].

The qualitative study results characterized verbal aggression, such as threats, cursing, racial slurs, screaming and yelling [6,29,30], and physical aggression, such as hitting with hand or objects, scratching, pulling hair, twisting wrists, and spitting [6,29-31]. In addition to verbal and physical aggression, 1 study described physical resistance to care, which included spitting out medication or refusing to eat or drink and physically threatening gestures such as a clenched fist directed toward the caregivers [31].

Situations in Which Aggressive Behavior Occur

The publications reviewed describe the situations in which aggressive behavior occurs at various levels. Some researchers focused on the interaction between caregiver and residents during direct care. Entering a person's personal space, which is impossible to avoid during personal care, seems to be the most important factor for triggering aggressive behavior. Bath and shower situations, oral hygiene, dressing, toileting, feeding, or helping the resident transfer from chair to bed or vice versa were identified as the precipitating events in most of the cases [6,17,18,25,30-33].

An additional factor that favors the occurrence of aggressive behavior is psychosocial stress of the resident, including death of a spouse, a family member moving away, the residents being asked to do something they do not wish to do, and the denial of residents' wishes [18,23].

Another approach for identifying causes promoting aggressive behavior are organizational or policy aspects that affect the staff's attitudes and the interaction between caregiver and resident. Personal factors, such as lack of respect for residents or disregarding residents' preferences; workplace factors, such as being short staffed or rushed; lack of communication about specific resident needs between shifts; and lack of work ethic and responsibility (e.g., caregivers attending to residents only after they have actively demanded attention) are factors contributing to assaults on long-term care personnel [29].

Care providers seem to accept violence as a natural consequence of their work because the events are seen as an unavoidable and constituent part of their job and impossible to solve [33].

The demanding nursing home environment provides the context for aggression toward staff, with residents, their families, and the administration placing multiple and simultaneous demands on care staff, creating an atmosphere in which residents' care is often rushed and limited to the task at hand. Some aggression toward staff was the result of personalities and prejudices. According to staff members, not explaining care before providing it, looking at residents the wrong way, or denying attention to residents sometimes provoked aggression. When residents interpreted care as dangerous or threatening, they became fearful and overwhelmed, and sometimes aggressively resisted care to protect themselves [26,30].

Caregivers' Strategies for Dealing with Aggressive Behavior

In summarizing the results on caregivers strategies for dealing with aggressive behavior from the 4 quantitative and 6 qualitative studies reviewed, 5 categories can be identified: 1) strategies aiming to prevent or detect aggressive behavior at an early stage, 2) calming and deescalating strategies when signs of aggressive behavior appear, 3) repressive or sanctioning interventions, 4) medical treatment, and 5) policy-based strategies. Strategies aiming to prevent or detect aggressive behavior in an early stage included, for example, checking residents' mood at the door, waiting until the patient invites you to act, watching for warning signs, preserving patients' dignity, practicing vigilance, and intuiting [29-31]. Furthermore, supporting residents' exercising of their rights and their competence to make decisions was reported to prevent aggressive behavior [34]. Calming and deescalating strategies when first signs of aggressive behavior appear included interventions such as talking to patients, considering their wants and needs, being friendly, being nice and joking with them, and working calmly and systematically [17,18,27,35,36].

The strategies falling into the category of repressive or sanctioning interventions are seclusion and isolation, holding with force, ignoring care recipients' need for help, giving reprimands, and ignoring protests to perform care [17,18,27,32,36]. Administering medications as a further way to reduce aggressive behavior is mentioned in 4 publications [17,18,27,35].

Policy-based strategies such as staff job descriptions and resident care plans with descriptions of generic procedures to deal with aggressive occurrences, such as behavior monitoring, validation therapy, or behavioral contracts, were reported in only 1 publication [35].

Table 3: Overview of Studies Included in the Review

Author(s) Country	Setting Subjects	Study Type: Purpose/Aim	Sample	Instrument	Information About		
					TOA *	SI**	STR ***
Quantitative Publications							
Almvik et al. (2006), [17] Norway	2 psycho-geriatric wards, 2 nursing homes	Prospective prevalence investigation: to record the frequency and nature of violent incidents	82 patients, 210 aggressive incidents	SOAS-R	X	X	X
Aström et al. (2004), [32] Sweden	8 nursing homes, 5 sheltered housing sites, 11 group dwellings	Structured telephone interviews: to record emotional reactions and the management modes of violent incidents among staff exposed to violence	Registered nurses, assistant nurses, nurse's aides (574 in nursing homes, 140 in sheltered housing facilities, and 134 in group dwellings)	Structured questions		X	X
Bowie et al. (2001), [22] United States	Chronic psychiatric hospitals and nursing homes	Survey: to record the frequency and type of aggression (verbal or physical) in psychiatric in patients compared with patients who were discharged to a nursing home setting	170 patients/residents	PANSS, MMSE, CERAD, Cognitive Battery, SAFE, OAS	X		
Gates et al.	6 nursing	Survey: to describe the	138 NAs	Demographic and	X	X	

(2003), [25] United States	homes	context in which assaults occur against NAs from residents in nursing homes and to identify characteristics of the NAs in relation to the incidence of assaults		Employment Survey, Occupational Stress Inventory, State-Trait Anger Expression Inventory-2, The Assault Log			
Glaus Hartmann (2003), [18] Switzerland	6 nursing homes	Prospective study: to investigate the frequency and nature of aggressive incidents	431 residents, 266 aggressive incidents	SOAS-R	X		
Gruber-Baldini et al. (2004), [19] United States	193 RC/ALs	Cross-sectional study: to examine the prevalence and potential risk factors for behavioral symptoms and related medication management in a representative sample of elderly RC/AL residents across the spectrum of RC/AL facility types	2078 RC/AL residents	CMAI plus 2 additional ‘‘resistance to care’’ items (Health status, Cognitive Impairment), Dementia Cornell Scale			
Hantikainen et al. (1998), [27] Switzerland	7 nursing homes	Cross-sectional study: to record types and prevalence of disruptive behavior among elderly residents, nurses’ experiences and the types of nursing interventions employed	173 caregivers	Questionnaire: Disruptive Behaviors in Elderly Patients; categorizing of the open-ended questions with qualitative content analysis	X		X
Léger et al. (2002), [23] France	34 long-term care units in 32 retirement	Survey: to explore epidemiological features of agitation and aggressiveness in elderly individuals	308 residents	34-item questionnaire	X	X	

	homes						
Morgan et al., (2005), [28] Canada	16 nursing homes	Cross-sectional survey: to determine differences between NAs working in rural nursing homes either with or without an SCU regarding job strain, exposure to disruptive or aggressive behaviors, and related distress	355 NAs	56-item questionnaire	X		
Schreiner (2001), [20] Japan	6 nursing homes	Retrospective study: to provide data on the frequency and distribution of aggressive behaviors and possible relations to sex, age, and self- care ability; to explore caring staff's attitudes about such behavior	391 residents	CMAI, resistance to personal care scale, ADL Independence Scale; qualitative assessment: caregiver opinions on major caregiving problems	X		
Soombontantont et al. (2004), United States	15 skilled nursing facilities	Observation study: to test the hypothesis: that ''negative'' caregiver behaviors would precede more often assaults than ''positive'' behavior	73 residents	Outcome variables: assaultive behavior; predictor variables: caregiver behaviors (rated by using the Caregiver Bathing Behavior Observation	X	X	
Sprenger (2001), [24], Switzerland	4 nursing homes	Cross-sectional design: to record the frequency and forms of aggressive behaviors from	124 caregivers	Questionnaire on frequency of verbal and physical	X		

		nursing home residents		aggression and the most common forms of aggressive behavior; and knowledge about aggression and the need for training for staff			
Voyer et al. (2005), [21], Canada	28 long-term care facilities	Cross-sectional study (secondary analysis): to describe the phenomenon of aggressive behavior among older patients in long-term care facilities	2332 older adults	CMAI, MOSES, social visitation, use of physical restraint, review of medical files	X		
Gates et al. (1999), [6], United States	6 nursing homes	Qualitative design: To determine whether staff consider resident aggressiveness to be violence and to describe the nature and complex dynamics of the violence occuring in nursing homes?	54 caregivers (CNAs) 6 nursing directors	Focus group meetings	X	X	
Jervis (2002), [35], United States	78-bed nursing home	Ethnographic study: to explore how staff members conceptualized and dealt with difficult resident behavior	64 staff members, 74 residents	21 months of participant observation of social interaction; interviews with 14 residents and 16 staff members; analysis of care plans of the 14 participating residents	X	X	
Levin et al. (2003), [29], United States	8 long-term care facilities	Exploratory study: to explore the factors contributing to	7 CNAs, 1 administrator	Focus group sessions	X	X	X

		assault on long-term care personnel					
Miller (1997), [31], United States	1 dementia special care unit	Qualitative study: to explore nursing staff members' responses to physically aggressive patient behavior and the effect that physically aggressive behavior had on them personally and on their nursing practice	27 nursing staff, 54 interviews	Interviews	X	X	X
Sandvide et al. (2004), [33], Sweden	Nursing homes, group dwellings, sheltered housing	Qualitative study: to study violent events experienced and described by care providers	61 narrated violent events by 39 care receivers	Telephone interviews		X	
Shaw (2004), [30] United States	6 nursing homes	Grounded theory study: to present ''real-world'' persectives on the conditions and context of resident aggression and practical strategies used to prevent and manage aggression, as described by care staff	15 nursing home staff, 6 investigators	Interviews	X	X	X
Skovdahl et al. (2003), [34], Sweden	3 long-term care units	Phenomenological- hermeneutic approach: to study caregivers' reflections about and attitudes toward behavioral and psychiatric symptoms of dementia and caregivers' handling of symptoms	15 formal caregivers	Narrative interviews			X

Skovdahl et al. (2003), [36] Sweden	2 long-term care units	Phenomenological hermeneutic approach: to illuminate interactions between individuals with dementia who exhibit aggressive behavior and caregivers with and without aggressive behavior using video recordings	6 video sequences of 2 residents (3 times per resident) and 9 caregivers	Both residents were recorded on video, 3 times each, in interactions with 1 or 2 caregivers on each video sequence			X

ADL 5 activities of daily living; CERAD 5 Consortium to Establish a Registry for Alzheimer's Disease; CMAI 5 Cohen-Mansfield Agitation Inventory; CNA 5 certified nursing assistants; MMSE 5 Mini-Mental State Examination; MOSES 5 Multidimensional Observation Scale for Elderly Subjects; NA 5 nursing assistant; OAS 5 Overt Aggression Scale; PANSS 5 Positive and Negative Syndrome Scale; RC/AL 5 residential care/assisted living facilities; SAFE 5 Social Adaptive Functioning Evaluation; SCU 5 Dementia Special Care Unit; SOAS-R 5 Staff Observation Aggression Scale–Revised.

**Types of aggressive behavior.*

***Situations in which aggressive behavior occurs.*

****Strategies to deal with aggressive behavior.*

Table 4: Types and Prevalence of Aggressive Behavior

Author(s)	Sample	Prevalence and Types of Aggressive Behavior
Almvik et al. (2006) [17]	82 patients, 210 incidents	Prevalence: 82 patients generated 210 incidents in 3 months; Types: Verbal aggression (58%), chair (13.7%), glassware (6.1%), spitting (15.6%), hand (55.2%), foot (11.8%), teeth (4.2%), knife (0.5%)
Aström et al. (2004) [32]	848 nursing staff	Prevalence: 11.4% of nurses had been exposed to aggressive behavior during 1 year (range: 1–4 incidents)
Bowie et al. (2001) [22]	170 patients/residents	Prevalence/type: aggressive behavior in the previous 7 days included verbal aggression—angry shouting (26.5%), mild insults (13.3%), moderate threats of violence (10.6%), clear threats of violence (3.5%); physical aggression—swings and misses/grabs at clothes (6.2%), strikes/ pulls/kicks (3%–6%), causes bruises/welts (3.5%)
Gates et al. (2003) [25]	138 nursing assistants	Assaults during 80 hours of work: 94 nursing assistants reported 624 assaults; mean number of assaults for all nursing assistants: 4.52; Types: hitting or punching (51%); grabbing, pinching, or pulling hair (40%); kicking (27%); scratching or biting (23%); spitting (11%); throwing or hitting with object (9%)
Glaus Hartmann (2003)[18]	431 residents, 266 incidents	Prevalence: 431 patients generated 266 incidents in 8 weeks; 1.2 incidents per day or 4–5 times per week; Types: physical attacks (hitting, pulling hair, scratching), 3–4 times per week; verbal attacks (threats, insults)
Gruber-Baldini (2004)[19]	2078 residents	Prevalence: Study period was 1 year; Types: Any aggression (13%); cursing, verbal aggression (12%); hitting, kicking, pushing, biting, scratching, aggressive spitting (6%); grabbing people, throwing things, tearing things, or destroying property (5%); other aggressive behavior or self-abuse (3%)
Hantikainen et al. (1998) [27]	173 nursing staff	Prevalence/types on 1 measurement point: Physical aggression (24%: daily, 28.7%: weekly, 47.3%: seldom), verbal aggression (20.2%: daily, 28.6%: weekly, 51.2%: seldom), sexual aggression (3.7%: daily, 4.3%: weekly, 92%: seldom)
Léger et al. (2002) [23]	308 residents	Prevalence/types on 1 measurement point: Verbal aggressiveness (76%), verbal agitation (68%), physical agitation (60%), strolling (52%), physical aggressiveness (48%)
Morgan et al. (2005) [28]	355 nursing aides	Prevalence: 73.4% of nursing aides had been physically assaulted in the past 12 months
Schreiner et al.	391 residents	Study period: 2 weeks; Any aggressive

(2001) [20]		behavior (42.2%–58.2%), physically aggressive behavior (24.4%–32.9%), verbally aggressive behavior (37.0%– 48.1%)
Somboontanont et al. (2004) [26]	73 residents	Prevalence/types: 27 videotapes of 18 residents contained physical assaults against caregivers; 105 episodes of resident assaults during showering or bathing were identified (hitting, hitting attempt, kicking, kicking attempt, biting, biting attempt, throwing things, spitting)
Sprenger (2001) [24]	124 caregivers	Prevalence/types: survey with 1 measurement point—frequency of verbal aggression: 69% consistently and 31% very rarely; frequency of physical aggression: 50% consistently, 38% very rarely and 11% never
Voyer et al. (2005) [21]	2332 older adults	Prevalence/types: cross-sectional study (secondary analysis) 21.2% physical aggressive behavior (hitting, pushing, kicking), 21.5% verbal aggressive behavior (insults are the most common), 11.2% displayed both behaviors

Discussion

This literature review reveals that caregivers in nursing homes were confronted with a broad spectrum of aggressive behaviors ranging from verbal aggression (e.g., threats and insults) to physical aggression (e.g., kicking, biting, or causes bruises). The use of differing terms for the same behavior (e.g., disruptive or assaulting behavior or challenging behavior) as measured by the quantitative instruments renders comparisons difficult [37]. It is also difficult to compare the prevalence rates due to the different measurement methods, although the figures underline the importance of the topic for caregivers and their superiors. Nevertheless, it is obvious how arduous and, in some cases, even dangerous working in a nursing home can be.

The examination of the literature also reveals diverse situations in which nursing home residents' aggressive behavior toward caregivers occurs. The most frequently cited situations involve personal care activities such as washing, bathing, dressing, or feeding. These findings suggest that the invasion of residents' personal space or the violation of personal territory may account for their aggressive behavior [38]. Given that the invasion of personal space is an integral part of a daily routine, particularly in personal care for the elderly [39], such caregiving activities should be critically reviewed relating to the performance and interaction between caregiver and recipient. Only a few studies investigated the role of interaction during caregivers' care activities with regard to the occurrence of residents' aggressive behavior.

Factors giving rise to psychosocial stress of the residents, such as death of a spouse or the denial of residents' wishes, also encourage the occurrence of aggressive behavior. Excessive demand of a concerned resident was seen as the cause for aggression in this case [23]. Organizational and policy aspects that may influence caregivers' attitudes toward residents

are further points taken into consideration regarding aggressive behavior. Disregarding residents' preferences, lack of respect, or loss of the right to make decisions seem to be additional aspects that provoke aggressive behavior. This proposition is corroborated by other authors who maintain that the interpersonal style adopted by a caregiver may trigger aggressive incidents [40,41].

Additionally, the demanding nursing home environment could provide a context for aggression toward staff due to short staffing, rushed task fulfillment, or caregivers' attitude that aggression is a part of one's work in a nursing home [33].

The third question in this review referred to strategies that caregivers use to deal with aggressive behavior. The study results demonstrate that many strategies for handling aggression aim to create and establish positive interaction between caregiver and resident, such as talking to residents, being friendly and empathizing with them, and keeping them calm. However, other strategies, such as forceful holding, seclusion, fixation, and ignoring protests or recipients' requests for help [32], seem to be perceived more negatively by residents. All in all, there is a lack of evidence regarding the effectiveness of various approaches and strategies to handle aggressive behavior, and it is currently impossible to give clear recommendations as to which approaches should be adopted as best practice [4,37].

Limitations of the Study

The heterogeneity of the studies and the differing definitions of aggressive behavior render comparisons difficult, and therefore this comparative analysis must be treated with caution. Each study reveals only a limited part of the complex picture, and questions related to situations and strategies are open to a broad spectrum of diverse interpretations. Finally, despite an extensive research strategy, publication bias cannot be excluded.

Conclusions and Recommendations for Further Research

The results of this literature review demonstrate the difficulty of establishing exact prevalence rates of residents' aggressive behavior toward caregivers and the complex interplay between several factors contributing to such behavior. Although reasons for the occurrence of aggressive behavior are numerous, it would seem that such behavior depends on the complex interplay between residents and the environment, including interpersonal style of interaction and organizational factors. In addition to the lack of evidence on the effectiveness of various approaches and strategies to handle aggressive behavior, there is also a lack of data on preferred measures that caregivers use in practice to deal with aggressive behavior. To support caregivers in their challenging tasks and to develop preventive strategies, more studies should investigate organizational, personnel-related, and other interacting factors that contribute to aggressive behavior.

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