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Feature Article

Latent classes of caregiver relationships with patients: Workplace violence implications

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ABSTRACT

The bonds and relationships that direct care workers in the home setting (DCWHs) develop with their elderly or disabled home care patients may put them at risk for patient violence. This study used a data-driven approach, latent class analysis, to identify distinct underlying patterns of DCWH–patient relationships and then assessed how DCWH–patient class membership was associated with patient violence. This study analyzed survey data obtained from 964 DCWHs working in two not-for-profit home care agencies. Four classes of DCWH–patient relationships emerged: Non-familial (40% of the sample), Overly Concerned (14%); Boundary-keeping (22%), and Overly Involved (24%). DCWHs in the Overly Involved class were more likely to experience physical violence from their patients relative to those in the Non-familial class (probability = 0.11 vs. 0.04, $p = 0.01$). Building a positive relationship with boundaries between caregivers and patients may have a potential to reduce patient violence toward the caregivers and ultimately improve the quality of care.

Introduction

Direct care workers in the home setting (DCWHs) are the primary paid caregivers in providing hands-on care, supervision, and emotional support for the elderly and disabled in the United States.[1] Their contributions to the care and well-being of patients who are "home-bound" and reliant on caregivers are enormous; their care involves assisting in patient activities of daily living (ADLs) such as bathing, dressing, transferring, eating, and toileting and instrumental ADLs (IADLs) such as preparing meals, assisting in taking medications, and shopping for groceries. The care that DCWHs provide is especially critical when family caregivers are not available. Geriatric care needs are expected to grow as many elders wish to remain at home[2] or may not afford assisted living facilities.[3]

DCWHs are deeply engaged in the personal care of patients with their job often evolving beyond the employee–client relationship to a family-like relationship.[4,5] Studies have shown that their relationship with patients often develops into a family-like, intimate, and long-term bonding. For example, Eustis and Fischer[6] examined from a consumer perspective how the quality of the relationship between home care patients and their workers is associated with quality of care. They found that a DCWH's responsibility was defined as the extent to which workers are accountable for the "total" needs of their patients and that two-thirds of the workers did extra jobs for their patients, almost always for no extra pay. They suggested that home care workers, perhaps especially in small towns, seem to function often as quasi-family members who take responsibility for the total needs of the patients. Piercy[7] investigated the types of relationships that were formed between older patients and their home health aides, and structural characteristics and interactive processes that facilitated various types of relationships. She found that most relationships were described as friendship or like one of the family. In the "like one of the family" relationship, the level of commitment to the patient's well-being was highest among aides. Family-like relationships included friendship but went beyond it. Three steps through which homecare workers become like patient's family have been described by Karner.[8] At the introductory stage, DCWHs and patients cooperate to perform specific tasks of home care. At the sharing of selves phase, their relationship deepens to a level of friendship where both parties feel that they are gaining beyond the employment exchange of tasks and paychecks. At the familial adoption phase, or becoming a fictive kin stage, natural deepening of the friendship occurs to identify each other as "daughter, grandchildren, and grandparents."

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The ecological model refined by Dahlberg and Krug[9] highlights relationship as one of the key factors for violence. The model suggests that proximity of social relationships is associated with the occurrence of violence. For example, in the cases of partner violence and child maltreatment, interaction on an almost daily basis or sharing a common residence with an abuser may increase the experience of violence.[10] Being a member of a family presents a unique risk factor for violence based on numerous studies on domestic or family violence.[11,12]

DCWHs are frequently victims of violence in their workplace. Studies have shown that 7.9–65.1% of DCWHs experienced non-physical aggression from their clients or someone else in the house, and 2.5–44.6% experienced physical assault.[4,13–17] Considering that DCWHs often develop family-like relationships with their home care patients,[6–8] there may be a potential association between DCWH–patient relationships and patient violence toward DCWHs. However, to our knowledge, no study has explored this potential association. This study addresses this type of violence, referred to as type 2 violence where the patient is the perpetrator and the victim is the care provider.[18] The type and proximity of a relationship are not easily understood by observation, thus may be best captured via a latent approach that can detect patterns among multiple indicators. Findings will provide further insight into possible situations that may be placing those who provide home care at a greater risk for experiencing patient violence while performing their job, thus leading to a safer work environment. The specific aims of this study were to 1) empirically derive subtypes of patient relationships with DCWHs and 2) explore the association between patient–DCWH relationships and patient violence toward DCWHs.

Methods

Sample and data

In 2006, a total of 980 DCWHs working for two not-for-profit home care agencies in the Chicago metropolitan area participated in a survey designed to assess their workplace safety and wellness (response rate: 74%).[19–22] This cross-sectional study analyzed the survey data of 964 of these DCWHs, who responded to all five patient–DCWH relationship items described below. In our sample, 92% were female; 57% had a high school degree or less as their terminal education level. Nearly 80% were African American and 17% were Caucasian. DCWHs older than 40 years old comprised 64% of the sample. Their average tenure of working in home care was 6.9 years (SD: 6.0, median: 5.0). Participation was anonymous and the study was approved by the Institutional Review Board.

Measures

DCWH–patient relationship

Five items assessed the type of direct relationship DCWHs had with their patients (referred to as "clients" in the survey): 1) Do you think of patients as family? 2) Do you take better care of your patients than you do of yourself? 3) Do you make yourself available for patients to call you at home during your scheduled time off? 4) Do you worry about your patients when you are away from them? 5) Do your patients think of you as family? Response choices for questions were a 5-level Likert scale except the third item (yes or no). In the analyses, responses to the four questions were dichotomized (binary latent class indicators) into yes (very much/a lot) or no (somewhat/not much/not at all) based on substantive meaning of the cut-point and the response distributions.

Patient violence

The National Institute for Occupational Safety and Health defines workplace violence as "violent acts, including physical assaults and threats of assault, directed toward persons at work or on duty."[23] It includes both intentional and unintentional acts. Accordingly, patient violence was captured by combining two items: I've had a patient that hit/punched/scratched me on purpose; I've had a patient that hit/punched/scratched me by accident. The new item measured whether a DCWH experienced physical assaults in a patient's home in the past 12 months (yes or no).

Statistical analyses

Data analyses proceeded in two stages using SAS 9.3.[24] First, latent class analysis (LCA) was performed to empirically classify individuals into homogeneous subgroups that reflected underlying (latent) patterns of patient relationship, using PROC LCA in SAS.[25,26] The five patient–DCWH relationship items were used as latent class indicators. Model fit indices such as Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Adjusted BIC were calculated to determine the best-fitting sub-class structure, with smaller values indicating a better fit. Entropy was used to measure the separation of classes, with a value approaching 1.0 indicating clearer delineation of classes. Substantive meaning of each solution also guided model selection. Information about the class structure was conveyed by the proportion of DCWHs in each class (latent class prevalence), and the probability of reporting each item within a class (item-response probabilities). To avoid boundary values (0 or 1) of parameter estimates, a data-derived prior was applied when item probabilities were calculated.[25] The second stage assessed how patient-DCWH class membership was associated with patient violence on DCWHs, using the SAS macro LCA_Distal.[27,28]

Results

LCA model

Fit indices for six models that represent a different number of latent classes were shown in Table 1. A four-class model was supported by the lowest Adjusted BIC and an entropy value closest to one. Parsimony criterion also supported the selection of the four-class model, though the AIC indicated a five-class model. Moreover, the four-class model captured meaningful patterns of relationships between patients and DCWHs. Each probability of endorsing the five patient–DCWH relationship items within the four identified latent classes as well as class prevalence are shown in Table 2. The Non-familial class (40% of the sample) consists of DCWHs who responded no to low endorsement for any of the five items, indicating a lack of family like relationship. The Overly Concerned class (14%) had a high probability of worrying about patients when away from them, though these DCWHs did not think of their patients as

Table 1
Fit indices for LCA models of relationships between patients and DCWHs.

# of classes	G^2	AIC	BIC	aBIC	Entropy
1	754.09	764.09	788.44	772.56	1.00
2	108.49	130.49	184.08	149.14	0.70
3	49.16	83.16	165.96	111.97	0.64
4	23.47	69.47	181.51	108.46	0.77
5	6.17	64.17	205.43	113.33	0.66
6	1.05	71.05	241.54	130.38	0.68

Note: AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; aBIC = Adjusted Bayesian Information Criterion.