

Safety Factors Predictive of Job Satisfaction and Job Retention Among Home Healthcare Aides

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Objectives: Although many of the well known work characteristics associated with job satisfaction in home health care have been documented, a unique aspect of the home health care aides' (HHA) work environment that might also affect job satisfaction is the fact that their workplace is a household. To obtain a better understanding of the potential impact of the risks/exposures/hazards within the household environment on job satisfaction and job retention in home care, we recently conducted a risk assessment study. **Methods:** Survey data from a convenience sample of 823 New York City HHAs were obtained and analyzed. **Results:** Household/job-related risks, environmental exposures, transportation issues, threats/verbal and physical abuse, and potential for violence were significantly correlated with HHA job satisfaction and job retention. **Conclusions:** Addressing the modifiable risk factors in the home health care household may improve job satisfaction and reduce job turnover in this work population. (J Occup Environ Med. 2008;50:1430–1441)

Although home care has historically received little public attention, rapid demand for services and increasing recognition of its critical role in the US health care system is raising its profile.¹ With over one million workers, home health care is a large and fast growing sector.² By 2016, it is projected that the number of home care workers will grow to 1,170,935, an increase of 48.7%, making this one of the fastest growing occupations in the United States.² The workforce is mainly comprised of paraprofessionals, specifically, personal and home care aides and home health aides (HHAs). HHAs provide health-related care, such as administering oral medications and checking the patient's vital signs, in addition to helping with such daily tasks as bathing, toileting, eating, ambulating and transferring, as well as housework. Home care work, typically physically and emotionally demanding, is also low paying, with a nationwide average hourly wage of \$9.66 and annual salary of \$20,100.¹ In addition, employee benefits for home care workers may be limited; an estimated 32% lack medical insurance.³ Combining these issues of demanding work and poor wages, it is not surprising that many states are now experiencing a shortage of home care workers.⁴

Working Conditions in Home Care

Long work hours are common in home care, as many workers commute long distances (frequently us-

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ing mass transportation) and often have second or even third jobs. Providing care to patients with complex physical and mental needs without, in some cases, easily accessible support and necessary supplies can be trying for even the most seasoned worker. Although adverse work characteristics associated with home care have been shown to be strongly associated with job satisfaction (which is highly correlated with job retention), one aspect of home care that has not received much attention is the impact of various household conditions on home care workers' job satisfaction and job retention.⁵⁻⁹ Because of their job duties, home care workers may be at risk of exposure to the numerous occupational hazards associated with health care in general, such as ergonomic hazards, blood and body fluid exposures and workplace violence. The risk associated with these hazards may be increased in home care for a number of reasons, including lack of regulatory oversight, minimal supervisory and peer support, limited access to health and safety professionals, and suboptimal safety equipment and supplies. In addition, since their workplace is also a household, home care workers may also be exposed to household related hazards, such as toxic substances exposures (eg, lead paint), fire safety hazards and household allergens, as well as interpersonal violence and abuse, which might present additional risk to home care workers.

Information about occupational health hazards in the home care setting has primarily come from anecdotal and qualitative reports that classify hazards into two major categories: violence or the threat of violence and unsanitary household conditions. Recent analysis by Markkanen et al, of qualitative data collected during focus groups and in-depth interviews of home health care nurses and aides identified two broad areas of hazards: personal safety hazards and environmental contaminants.¹⁰ The authors also noted that unlike facility-based

nurses and aides, home health care providers may have to contend with sudden disruptions from pets, children, and family members. Similar findings have been reported by Kendra et al, who found that home health care administrators and staff often cited numerous safety concerns including risk of physical and emotional injury, fear of contracting communicable diseases, loss of property, long commutes, exposure to high-crime areas, inappropriate patient or caregiver behavior and evening assignments.¹¹ The authors concluded that the home health care work environment may be both unpredictable and potentially dangerous. Kendra et al, also explored the effect these threats might have on patient care.¹¹ Sixty-eight percent of the home health care staff in their study reported that they would shorten their patient visit if they felt unsafe in a home.¹¹ These staff members also reported that they completed their visits "as soon as possible." Kendra et al, suggested that when visits were completed "as soon as possible," patient care responsibilities may be neglected.¹¹

In light of these findings, and in consideration of the growing problems of shortages and retention of home care workers, a quantitative assessment of the contribution of household/job-related risk factors to job satisfaction and job retention was conducted.

Materials and Methods

Procedures

A health and safety survey was constructed following extensive developmental steps, including in-depth interviews, focus groups, cognitive interviews and pilot testing. The final 58-item survey included items that addressed the following: demographics of the home health care worker, job-related variables (including level/type of care provided and potential occupational health hazards), the use of and training on safety devices, potential household health hazards,

job satisfaction and job retention. For this study, analyses were limited to demographics, household/job-related variables, and job satisfaction and job retention variables. The survey was designed to be completed within 30 minutes and was prepared in English at a 6th grade reading level to facilitate its rapid completion. The survey responses were primarily categorical, although some items had 4-5 point Likert-type scale response choices and several items were open-ended. (Please contact the corresponding author for a copy of the questionnaire and code book.)

Because of the well-established difficulty in surveying home health care workers and the additional challenges in recruitment of persons for whom English may be a second language, as is the case for many home care paraprofessionals, an in-person recruitment strategy was employed. To facilitate this, a collaborative relationship was formed with an occupational health organization that conducts mandatory health assessments and screenings for home care agencies throughout New York City. In 2007, recruitment of participants took place in the organization's waiting rooms, in conveniently located offices that were easily accessible to the New York City-based research team. Participants could complete the study questionnaire in private areas adjacent to the waiting rooms. In some cases, the data collector helped to facilitate the survey administration by reading the questions aloud; however, data collection was primarily self-administered. The incentive for participation was a single one-dollar scratch-off New York State lottery ticket and enrollment into a lottery drawing for a \$25 gift card prize (chance of winning: 1:100). Although the survey was anonymous, each participant was asked to sign an informed consent form and all procedures involving subject participation had the prior approval of the Columbia University Institutional Review Board.

Questionnaire Constructs and Items

Demographic and Job-Related Variables. Gender, age, primary language, tenure as a home health care worker, union membership, hours traveling to work each day, hours worked per week, number of patients served per week, type of housing where patients live (apartment vs nonapartment), setting (urban vs rural), age of patient (elderly, adult, child) and type of care (short-term vs long-term; definitions of short-term and long-term care were left up to the participants) were collected for descriptive purposes and as potential control variables.

Major Independent Variables. Two items specifically addressed threats to personal safety and verbal and/or physical abuse. Participants were asked “Have you ever felt threatened (for your personal safety) at any time during your career in home care (even on the way to a patient’s home)?” [Perceived Threat to Personal Safety], with a score of 0 or 1, with 1 indicating the experience of threat. Participants who indicated feeling threatened could also identify who or what made them feel threatened (ie, client, client’s family, client’s neighbors, and client’s pet). (This second part of Perceived Threat to Personal Safety was not used in scoring this variable; however, it served to clarify the source of the threat.) In line with the Perceived Threat to Personal Safety item was a question that asked “Have you ever experienced any of the following in home care: 1) verbal abuse and/or 2) threat of physical harm?” [Verbal Abuse/Threat of Physical Harm], with scores ranging from 0 to 1, 0.5 indicating either verbal abuse or threat of physical harm and 1 indicating the experience of both. Home care paraprofessionals’ exposures to 10 environmental contaminants/irritants were assessed via a checklist (“At the clients’ homes, are you or have you been exposed to: air pollution, animal hair, bed bugs, cigarette

smoke, cockroaches, excessive dust, irritating chemicals, mice/rats, mold/dampness, peeling paint?”) and were scored 1 (checked) or 0 (not checked). Twenty-three household/job-related conditions that could be considered bothersome (and potentially risky) to home care workers were also assessed via a checklist (“What conditions, if any, bother you about your current job: risk of exposure to contagious diseases, unsanitary conditions in home, unsafe conditions in home, lack of needed equipment, neighborhood crime, patient’s family members, patient’s neighbors, drug use in home, guns in the home, aggressive pets, demanding patients, heavy patient lifting, travel-related problems, cost of transportation, parking/traffic problems, racial discrimination, messy home, temperature extremes, poor lighting, loud noises, dealing with Registered Nurses, understaffing, and heavy weight of the visit bag?”). These were scored 1 (checked) or 0 (not checked).

Although all of the major independent variables were considered potentially independent contributors in explaining variance of the major outcome variables, it was decided to empirically determine whether all of the items that were subsumed within each scale actually “belonged” to the appropriate scale. For instance, would a total score of the household/job-related conditions be as useful in predicting job satisfaction and job retention as new identified subscales or factors? In addition, it was not clear how different the environmental contaminants/irritants were from the household/job-related conditions. Furthermore, it was not clear whether the Perceived Threat to Personal Safety and the Verbal Abuse/Threat of Physical Harm items were distinct; that is, would the Perceived Threat to Personal Safety item and the Verbal Abuse/Threat of Physical Harm item be correlated with one another and would the two items behave just like other potential risk/exposure/hazard items (environmental contaminants/irritants and house-

hold/job-related conditions)? In order to determine if data reduction could be accomplished, a principal component analysis was undertaken. The criteria for determining the number of factors to be used in the analysis were: 1) factors needed to have eigen values (Kaiser criterion) over 1, and 2) factors needed to fall above the debris line in a Scree plot. In addition, individual items had to load on a factor at a value of 0.40 or higher. Furthermore, it was required that Bartlett’s Test of Sphericity be significant in order to ensure that the correlation matrix was not an identity matrix and that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was close to 1.0 to reflect that a principal component analysis would be useful in grouping variables into a smaller set of underlying factors.

Major Outcome Variables. Job Satisfaction and Job Retention were assessed using two questions: 1) “All in all, how satisfied would you say you are with your job?” with responses ranging from “not at all satisfied” [0], “somewhat satisfied” [1], “satisfied” [2], to “very satisfied” [3]; 2) “For any reason, are you planning to leave home health care within the next 12 months?” with three response choices: “yes,” [0], “maybe,” [1], and “no.” [2]. Thus higher scores on both Job Satisfaction and Job Retention items reflected greater satisfaction with the job and a lower likelihood of leaving the profession, respectively.

Analysis

All variables were first explored by examining the raw score frequency distributions. General descriptive statistics were computed, including the calculation of percentages for frequency response categories, and means and standard deviations for continuous response variables. The Pearson product-moment correlation coefficient was used to assess pair-wise relations among the variables. Predictor variables were either continuous (eg, age of participant) or dichotomized (eg,

gender). When a predictor variable was dichotomized, the Point-biserial correlation coefficient was calculated. The bivariate relations reveal the linear associations among the variables in isolation from any of the other variables. Thus, if two predictors are correlated with one another, the bivariate assessment cannot identify the separate and unique association that each variable has with the outcome variable. In order to determine the unique contribution of each predictor variable, a multiple regression analysis, utilizing the least squares method, was used. This method allows for the determination of the degree of explanatory contribution of each predictor in accounting for variance of the outcome variable. Standardized partial regression coefficients (β s) were calculated. Values of β can range from -1 to $+1$ (when assumptions are met) and the closer this index is to the absolute value of 1, the stronger the contribution of the specified predictor variable. The total proportion of variance accounted for by all of the predictor variables in the outcome variable was assessed by the multiple correlation squared. This index is the correlation squared between the linear combination of the predictor variables and the outcome variable. Values of 0.01, 0.09, and 0.25 are typically representative of weak, moderate, and strong relations, respectively.¹² All of the statistical assumptions for conducting correlations and for multiple regression analysis (ie, normality of the residuals, homogeneity of the residuals, linearity of the residuals, and outlier detection) were ascertained prior to the analysis. Level of significance was established at an α level of 0.05, two-tailed. Analyses were conducted using SPSS version 16.0.2.¹³

Results

Response Rate

A total of 1561 participants completed the questionnaire. Among the 1561 participants, 823 indicated that they were home health care aides

(HHAs), 530 indicated they were personal care workers/home attendants, 142 indicated they were both, and 66 did not indicate their titles. These groups were compared on all study variables and were found to be different on many key variables (eg, age, tenure, number of patients, union membership, number of environmental containments/irritants, number of household/job related risks, feeling threatened); hence, it was decided to examine the largest group of respondents for this paper, the HHAs. Unfortunately, the overall response rate could not be determined because it was not exactly known how many subjects were available for sampling and what percentage of those approached volunteered.

Demographics

The sample of HHAs ($N = 823$) was comprised primarily of women (93.1%), with a mean age of 41.29 years (Table 1). Over 50% of the HHAs provided care to one patient per week while working an average of about 35 hours per week. More than 60% of the respondents had worked as a HHA for 4 or more years. Over 58% of HHAs reported being members of a union. Each HHA spent about 2 hours commuting per day. Close to 76% of the patients lived within city limits and a majority (50.7%) lived in apartments. A majority of the patients were elderly and over 56% of all patients required long-term care.

Safety Risks/Exposures/Hazards

Violence and threat of violence by a patient, the patient's family, patient's pets or by a patient's neighbors was common. Approximately 26.2% of the HHAs reported that they had experienced some form of perceived threat to personal safety. Of those that felt personally threatened, 57.9% felt threatened by the people who lived in their client's neighborhood, 34.7% felt threatened by their client's family, 30.1% by the client, and 19% by their client's pets. More than 20% all of the HHAs

reported verbal abuse only, 1.8% reported physical threats only, and 6.3% reported both verbal and physical threats.

In order to determine whether the 35 items (Perceived Threat to Personal Safety [number of items (n) = 1], Verbal Abuse/Threat of Physical Harm [$n = 1$], Environmental Contaminants/Irritants [$n = 10$], and Household/Job-Related Risks [$n = 23$]) were assessing different types of safety risks/exposures/hazards, a Principal Component analysis was conducted with an oblique rotation (with the assumption that the discovered factors would be correlated with one another). Barlett's Test of Sphericity was significant (Chi Squared = 6610.36, $P < 0.001$) and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.915, indicating that the data were satisfactory for this type of analysis. An examination of the eigen values and Scree plot revealed that eight factors (ie, domains of safety risks/exposures/hazards) could be identified which accounted for 52.47% of the variance. This value would be considered "acceptable" according to Merenda who stated that "the proportion should be at least 0.50 [50%]. In that way, it can be concluded that the factors or components explain as much of the variance as they fail to explain".¹⁴ The internal consistency of each factor was assessed using Cronbach's alpha coefficient (α). Factor I was labeled Household/Job-Related Risks I (23.94% of the variance accounted for and Cronbach $\alpha = 0.85$ [95% CI = 0.84–0.86]) and consisted of ten items (scored 1 or 0 for each item) from the Household/Job-Related Risks Checklist. Items and their loadings were: unsanitary conditions in the home setting [0.77], unsafe conditions in the home [0.74], risk of exposure to contagious diseases [0.70], messy home/clutter [0.69], racial or ethnic discrimination from the client or client's family [0.61], temperature extremes [0.59], demanding clients [0.59], client's family [0.54], neighborhood crime

TABLE 1Description of the Sample, Home Healthcare Aides ($N = 823$)

Characteristics	Number (%) Reporting
Gender	
Female	766 (93.1)
Male	39 (4.7)
Missing	18 (2.2)
Age	$\bar{x} = 41.29$ yr SD $\pm = 11.41$
Primary language spoken	
English	716 (87.0)
Spanish	145 (17.6)
Russian	15 (1.8)
Chinese	2 (0.2)
Other	102 (12.4)
Tenure as a home healthcare aide	<1 yr = 38 (4.8) 1–3 yrs = 273 (34.2) 4–6 yrs = 185 (23.6) 7+ yrs = 303 (37.9)
Hours worked in home care (per week)	$\bar{x} = 34.54$ hr SD $\pm = 18.42$
Number of patients seen (per week)	1 = 396 (51.1) 2–3 = 344 (44.4) 4+ = 35 (4.5)
Union affiliation	
Union member	478 (58.1)
Non-union member	326 (39.6)
Missing	19 (2.3)
Daily commute time (hr)	$\bar{x} = 2.04$ hr SD $\pm = 1.32$
Patient residence type	
Apartment building only	417 (50.7)
House only	128 (15.6)
House/apartment building	90 (10.9)
Assisted living/nursing home	50 (6.1)
Assisted living/nursing home, apartment building	26 (3.2)
House, assisted living/nursing home/apartment building	30 (3.6)
Other-including combinations of the above	36 (4.4)
Missing	46 (5.6)
Patient residence setting	
Urban	621 (75.5)
Suburban	50 (6.1)
Rural	13 (1.6)
Missing	139 (16.9)
Patient makeup	
Elderly only	427 (51.9)
Adults only	99 (12.0)
Elderly and adult	86 (10.4)
Children only	12 (1.5)
Elderly/adult/children	24 (2.9)
Some combination of the above	13 (1.6)
Missing	162 (19.7)
Type of care	
Long term	465 (56.5)
Short term	122 (14.8)
Long term and short term	85 (10.3)
Missing	151 (18.3)

Column numbers (and percentages) may not add to total N (or 100%) due to missing values or multiple responses.

[0.48], and heavy client lifting [0.47]. Factor II was labeled Environmental Exposures (7.45% of the variance accounted for and Cronbach

$\alpha = 0.85$ [95% CI = 0.83–0.86]) and consisted of all 10 items (scored 1 or 0 for each item) from the Environmental Contaminants/Irritants

Checklist. Items and their loadings were: excessive dust [0.71], mold/dampness [0.71], mice/rats [0.70], cockroaches [0.68], peeling paint [0.67], cigarette smoke [0.62], animal hair [0.61], air pollution [0.57], irritating chemicals [0.53], and bed bugs 0.45]. Factor III was labeled Transportation Issues I (4.21% of the variance accounted for and Cronbach $\alpha = 0.53$ [95% CI = 0.46–0.59]) and consisted of two items (scored 1 or 0 for each item) from the Household/Job-Related Risks Checklist. Items and their loadings were: cost of transportation [0.77] and travel-related problems [0.73]. Factor IV was labeled Household/Job-Related Risks II (3.74% of the variance accounted for and Cronbach $\alpha = 0.50$ [95% CI = 0.43–0.55]) and consisted of three items (scored 1 or 0 for each item) from the Household/Job-Related Risks Checklist. Items and their loadings were: understaffing [0.74], heavy weight of visit bag [0.73], and loud/irritating noise in the home setting [0.58]. Factor V was labeled Threatened/Verbal and Physical Abuse (4.50% of the variance accounted for and Cronbach $\alpha = 0.62$ [95% CI = 0.56–0.67]) and consisted of two items: Perceived Threat to Personal Safety [loading = 0.63] and Verbal Abuse/Threat of Physical Harm [loading = 0.59] and scored 1 or 0, and 1, 0.5, and 0, respectively. Factor VI consisted of a single item (scored 1 or 0) from the Household/Job-related Risks Checklist. The factor was labeled Transportation Issue II and accounted for 3.28% of the variance. The item was parking/traffic problems [loading = 0.77]. Factor VII also consisted of a single item (scored 1 or 0) from the Household/Job-related Risks Checklist. The factor was labeled Client's Neighbors and accounted for 3.23% of the variance. The item that loaded on this factor was "Client's Neighbors" [loading = 0.48]. The last factor, Factor VIII (3.12% of the variance accounted for and Cronbach $\alpha = 0.60$ [95% CI = 0.55–0.64]) con-

sisted of three items (scored 1 or 0 for each item) from the Household/Job-related Risks Checklist. The factor was labeled Potential for Violence and the items were (and their loadings): guns in the home [0.73], drug use in the home [0.69], and aggressive pets [0.59]. There were two other items that loaded 0.40 on this factor (lack of needed equipment or supplies and poor lighting in the home setting) but these were not

included because they did not make complete conceptual sense with the rest of the items, therefore they were omitted from any further analysis. One other item from the Household/Job-related Risks Checklist that did not load on any of the eight factors was “Dealing with RNs.”

The frequency of responses for all items in each of the safety risks/exposures/hazards factors are presented in Table 2. Environmental

Exposure was the most frequently reported type of safety risks/exposures/hazards, with cockroaches, cigarette smoke and mice/rats the most often-cited sources. Reports of verbal, physical or both types of abuse and feeling threatened were also common. In order to obtain a perspective in regard to the absolute mean amount of the safety risks/exposures/hazards, all factors were divided by the number of items that were contained within the factor, resulting in a mean factor score. This resulted in the number of items per factor being equated so that comparisons could be made among the factors. Scores could range from 0 to 1 per factor—the higher the score the higher the number of participants who endorsed the items that made up the factor. A repeated measures analysis of variance was conducted to examine the differences among the factors (a comparison of the factors in terms of the mean amount of endorsement). Results of the analysis indicated that the factors were statistically different, Hotelling’s Trace $F(7, 816) = 74.96, P < 0.001$ (Fig. 1). Post-hoc pair-wise comparisons (utilizing the Bonferroni Correction for multiple comparisons) revealed the following from the most common to the least common safety risks/exposures/hazards: Factor V (Threatened/Verbal and Physical Abuse) >Factor II (Environmental Exposures) >Factor III (Transportation Issues I) and Factor I (Household/Job Related Risks I) >Factor VIII (Potential for Violence) and Factor VII (Client’s Neighbors) >Factor VI (Transportation Issue II) and Factor IV (Household/Job Related Risks II). It is clear that the two factors that stand out the most were Factors V (Threatened/Verbal and Physical Abuse) and II (Environmental Exposures).

Job Satisfaction and Job Retention

For Job Satisfaction, 64% of the HHAs reported responses indicating

TABLE 2
Frequencies of the Eight Major Safety Risks/Exposures/Hazards Factors Experienced by Home Healthcare Aides (N = 823)

Health Risks and Safety Hazards	Number (%) Reporting	Number (%) Reporting at Least One Risk/Exposure/Hazard
Factor I—Household/Job-Related Risks I		328 (39.9)
Messy home	163 (19.8)	
Demanding clients	140 (17.0)	
Heavy client lifting	132 (16.0)	
Clients family	129 (15.7)	
Unsanitary conditions in the home	113 (13.7)	
Neighborhood crime	88 (10.7)	
Exposure to contagious diseases	83 (10.1)	
Racial discrimination from client or family	77 (9.4)	
Temperature extremes in client home	75 (9.1)	
Unsafe conditions in home	53 (6.4)	
Factor II—Environmental Exposures		455 (55.3)
Cockroaches	291 (35.4)	
Cigarette smoke	255 (31.0)	
Mice/rats	201 (24.4)	
Animal hair	183 (22.2)	
Excessive dust	173 (21.0)	
Irritating chemicals	134 (16.3)	
Peeling paint	125 (15.2)	
Mold/dampness	90 (10.9)	
Air pollution	81 (9.8)	
Bed bugs	54 (6.6)	
Factor III—Transportation Issues I		174 (21.1)
Travel-related problems	115 (14.0)	
Cost of transportation	109 (13.2)	
Factor IV—Household/Job-Related Risks II		56 (6.8)
Loud irritating noises in the home	33 (4.0)	
Under-staffing	19 (2.3)	
Heavy weight of visit bag	19 (2.3)	
Factor V—Threatened/Verbal and Physical Abuse		320 (38.9)
Experience of verbal, physical or both abuse	243 (29.5)	
Ever felt threatened	216 (26.2)	
Factor VI—Transportation Issues II		24 (2.9)
Parking/Traffic problems	24 (2.9)	
Factor II—Client’s Neighbors		32 (3.9)
Client’s neighbors	32 (3.9)	
Factor VIII—Potential for Violence		80 (9.7)
Aggressive pets	52 (6.3)	
Drug use in the home	44 (5.3)	
Guns in the home	17 (2.1)	

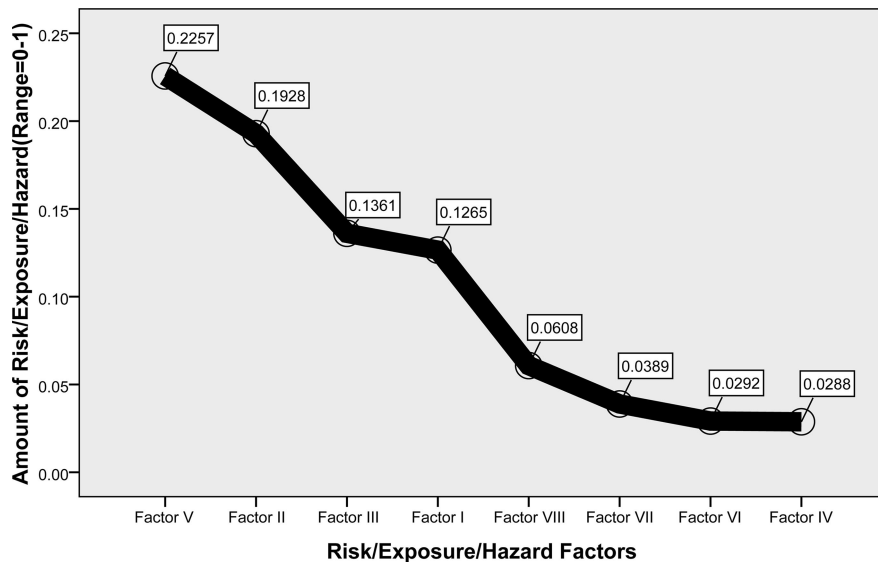


Fig. 1. Factor I = Household/Job-Related Risks; Factor II = Environmental Exposures; Factor III = Transportation Issues I; Factor IV = Household/Job-Related Risks II; Factor V = Threatened/Verbal and Physical Abuse; Factor VI = Transportation Issue II; Factor VII = Client’s Neighbors; Factor VIII = Potential for Violence.

“very satisfied or satisfied” and 36% reported “somewhat satisfied” or “not satisfied.” With respect to Job Retention, 18% reported that they were planning to leave their job in the next 12 months. Twenty-five percent reported that they might leave their job and 57% reported that they were planning to stay with their current job.

As shown in Table 3, Job Satisfaction was positively correlated with age (older age), tenure (greater number of years worked), and union membership. Length of time commuting to work per day, hours worked per week, caseload per week, type of housing, type of community (eg, rural vs urban), patient characteristics and job duties performed were not statistically related to Job Retention. Job Retention was negatively related to the same seven factors as Job Satisfaction and for the most part to the same degree (Table 3). In addition, Job Satisfaction and Job Retention were positively correlated, $r = 0.40$, $P < 0.001$.

TABLE 3
Predictors of Job Satisfaction and Job Retention

	Job Satisfaction	Job Retention
Gender (female +)	0.04	0.06
Age	0.12**	0.17***
Tenure	0.09*	0.06
Union membership (Yes +)	0.12**	0.11**
Travel time	0.04	-0.03
Hours worked	-0.06	0.02
Number of patients	-0.07	-0.02
Type of housing (apartment vs nonapartment)	0.02	0.02
Setting (city vs non-city)	0.01	0.00
Type of Patient (elderly vs nonelderly)	0.03	0.01
Type of Care (long term vs non-long term)	0.03	0.02
Factor I—Household/Job-Related Risks I	-0.24***	-0.17***
Factor II—Environmental Exposures	-0.25***	-0.19***
Factor III—Transportation Issues I	-0.18***	-0.11**
Factor IV—Household/Job-Related Risks II	-0.11**	-0.13***
Factor V—Threatened/Verbal and Physical Abuse	-0.30***	-0.22***
Factor VI—Transportation Issues II—Parking	0.03	0.00
Factor VII—Clients’ Neighbors	-0.10**	-0.07
Factor VIII—Potential for Violence	-0.12**	-0.17***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

were not statistically related to Job Satisfaction. Moderate-sized negative correlations were found between Job Satisfaction and Factor V (Threatened/Verbal and Physical Abuse), Factor II (Environmental Exposures), and Factor I (Household/Job-Related Risks I). Somewhat weaker correlations were found between Job Satisfaction and Factor III (Transportation Issues I), Factor VIII (Potential for Violence), Factor IV (Household/Job-Related Risks II), and Factor VII (Client’s Neighbors). Factor VI (Transportation Issue II) was not statistically related to Job Satisfaction. Turning to Job Retention, the results practically mirrored the results found for Job Satisfaction. Job Retention was positively correlated with age (older age) and tenure (greater number of years worked). Union membership, length of time commuting to work per day, hours worked per week, caseload per week, type of housing, type of community (eg, rural vs urban), patient characteristics and job duties performed were not statistically related to Job Retention. Job Retention was negatively related to the same seven factors as Job Satisfaction and for the most part to the same degree (Table 3). In addition, Job Satisfaction and Job Retention were positively correlated, $r = 0.40$, $P < 0.001$.

In order to determine the relative and unique contributions of variables that were significantly related to the outcome measures, hierarchical multiple regression analyses were conducted. In step one, using forced entry (age of HHA, years worked in home health care, and union membership), only union membership remained significant in the equation and explained 2.3% of Job Satisfaction variance. Forward entry was then used with the seven factors that were found to be significantly related to Job Satisfaction in the bivariate analyses. The final step (step six) revealed that five of the seven factors entered the regression equation. As can be seen in Table 4, the final

TABLE 4
Summary of Regression Analysis for Safety Risks/Exposures/Hazards Factors and Demographic Variables in Predicting Job Satisfaction

Variable	B	SE B	β	P	R ²	F _{change}	P
Step One					0.023	4.79	<0.003
Age	0.007	0.004	0.082	<0.057			
Years worked	0.006	0.008	0.034	<0.427			
Union membership	0.180	0.078	0.094	<0.022			
Full model (Step six)					0.148	4.35	<0.04
Age (+)	0.005	0.003	0.056	<0.164			
Years worked (+)	0.010	0.007	0.055	<0.184			
Union membership	0.162	0.074	0.085	<0.028			
Factor V	-0.269	0.063	-0.188	<0.001			
Factor I	-0.053	0.024	-0.105	<0.026			
Factor III	-0.163	0.063	-0.104	<0.010			
Factor VI	0.410	0.194	0.082	<0.035			
Factor II	-0.035	0.017	-0.095	<0.037			
					Full Model F (8, 616) = 13.42, P < 0.001		

N = 625.

Factor I indicates Household/Job-Related Risks; Factor II, Environmental Exposures; Factor III, Transportation Issues I; Factor V, Threatened/Verbal and Physical Abuse; Factor VI, Transportation Issues II (Parking).

Union membership (0 = No, and 1 = Yes).

TABLE 5
Summary of Regression Analysis for Safety Risks/Exposures/Hazards Factors and Demographic Variables in Predicting Job Retention

Variable	B	SE B	β	P	R ²	F _{change}	P
Step one					0.031	9.13	<0.001
Age	0.011	0.003	0.149	<0.001			
Union membership	0.121	0.068	0.074	<0.076			
Full Model (Step three)					0.093	8.34	<0.004
Age (+)	0.009	0.003	0.128	<0.002			
Union Membership	0.129	0.066	0.079	<0.052			
Factor V	-0.228	0.051	-0.189	<0.001			
Factor VIII	-0.125	0.043	-0.121	<0.004			
					Full Model F (4, 566) = 14.59, P < 0.001		

Factor V indicates Threatened/Verbal and Physical Abuse; Factor VIII, Potential for Violence.

Union membership (0 = No and 1 = Yes).

model accounted for 14.8% of the Job Satisfaction variance. The factor that carried the most “impact” as determined by the standardized β coefficient was Factor V ($\beta = -0.188$: Threatened/Verbal and Physical Abuse), whereas Factors I, II, and III had less but statistically significant “impacts” on Job Satisfaction. It is interesting to note that Factor VI (Transportation Issue II) changed its directional relation with Job Satisfaction. This is not unusual when many factors are entered into a regression equation. That is, in the

bivariate analysis, Transportation Issue II was negatively correlated with Job Satisfaction, but when the other factors were controlled, Transportation Issue II now became positively correlated with Job Satisfaction. It is unclear why this occurred, but this factor may be correlated with some other unmeasured variable that actually carries the relation.

In regard Job Retention, only age was significantly related to Job Retention in step one (Table 5). Forward entry of the seven factors resulted in only two factors entering the equation.

Again, Factor V (Threatened/Verbal and Physical Abuse) entered the regression and carried the most “impact” (Standardized $\beta = -0.189$) and was followed by Factor VIII (Potential for Violence). No other factors entered the model after this step. The full model explained 9.3% of the Job Retention variance.

In order to determine whether Job Satisfaction would mediate the relation between Factors V and VIII and Job Retention, a third regression analysis was conducted (Table 6). The first step in this analysis was similar to the previous analysis on Job Retention (the results are slightly different because of a smaller sample due to missing values). Forward entry of Job Satisfaction on step two resulted in a significant relation between Job Satisfaction ($\beta = 0.377$) and Job Retention and the model accounted for 16.8% of the variance in Job Retention. Forward entry of the factors resulted in Factors V (Threatened/Verbal and Physical Abuse) and VIII (Potential for Violence) entering the regression equation. An examination of the standardized β s indicate that the β coefficient for Factor V was reduced by 50% (from -0.189 to -0.092) from the previous analysis where Job Satisfaction was not in the equation. This suggests that Job Satisfaction potentially was acting as a partial mediator between the relation of Factor V (Threatened/Verbal and Physical Abuse) and Job Retention. The standardized β coefficient for Factor VIII did not change from the previous analysis to the current analysis, suggesting that Job Satisfaction does not mediate the relation between Factor VIII and Job Retention.

Discussion

The current study revealed that Job Satisfaction and Job Retention were related to a number of safety risks/exposures/hazards among our sample of HHAs. With respect to the demographic variables, it was found that age and union membership were positively related both to Job Satisfaction and Job Retention, whereas

TABLE 6

Summary of Regression Analysis for Safety Risks/Exposures/Hazards Factors and Demographic Variables in Predicting Job Retention while Controlling for Job Satisfaction

Variable	B	SE B	β	P	R ²	F _{change}	P
Step one					0.030	8.60	<0001
Age	0.010	0.003	0.142	<0.001			
Union membership	0.128	0.070	0.078	<0.066			
Step two					0.168	91.55	<0.001
Age (+)	0.007	0.003	0.102	<0.010			
Union membership	0.057	0.065	0.035	<0.378			
Job satisfaction	0.322	0.034	0.377	<0.001			
Full model (Step four)					0.192	4.91	<0.027
Age (+)	0.007	0.003	0.092	<0.019			
Union membership	0.067	0.064	0.041	<0.300			
Job satisfaction	0.287	0.035	0.335	<0.001			
Factor VIII	-0.114	0.042	-0.110	<0.006			
Factor V	-0.112	0.050	-0.092	<0.027			
					Full Model F (5, 551) = 26.24, P < 0.001		

Factor V indicates Threatened/Verbal and Physical Abuse; Factor VIII, Potential for Violence.

Union membership (0 = No and 1 = Yes).

tenure was positively related only to Job Satisfaction. These findings are consistent with Neal's theory of home health nursing practice.^{15,16} Neal claims that it typically takes the home health care worker about 2 years to master the logistical and clinical aspects of home care. Although Neal recognizes that the adaptive process is not completely linear and most likely represents a threshold relation (unlike the current study which examined only a linear relation and which did not have access to those HHAs that left the profession), her work suggests that those workers who are adaptable will satisfactorily achieve this stage and those workers who do not achieve the adaptive stage are the ones most likely to leave the home health care field.^{15,16} These findings, although specific to nurses, may also have validity for HHAs. Importantly, once the work tasks are mastered and the home care worker has adapted to the job, aspects related to quality of the work environment, in this case the patient's home, may have important implications for ongoing satisfaction with the job. Much more intensive study, with larger and more varied samples, will help to further eluci-

date factors related to job satisfaction and job retention in the home health care setting.

Regarding some of our other findings, unsurprisingly, union membership was also correlated with both Job Satisfaction and Job Retention, with those claiming union membership reporting greater Job Satisfaction and greater likelihood of staying with their current job. These findings correspond with the notion that union activity within an organization serves to protect the well-being of its members, thus implying that union membership may positively influence employees' job satisfaction and job retention.¹⁷⁻¹⁹

The fact that no significant relations were found between hours commuting per day, hours worked per week, number of patients per week, type of housing, type of setting, patient characteristics and type of patient care and job satisfaction and job retention may be a function of the generally low workloads in our sample. Over fifty percent of the HHAs surveyed provided care to only one patient per week and worked an average of almost 35 hours per week.

The most compelling and novel findings of this study are the strong

evidence of the potential impact of Threatened/Verbal and Physical Abuse, Environmental Exposures and Household/Job-related Risks on both Job Satisfaction and Job Retention of HHAs. To a lesser degree, but still contributing statistically in accounting for job satisfaction variance, were Transportation Issues, Client's Neighbors, and Potential for Violence. These same safety risks/exposures/hazards also accounted for variance in job retention except for Client's Neighbors. When each of the eight major factors (Household/Job-related Risks I [Factor I], Environmental Exposures [Factor II], Transportation Issues I [Factor III], Household/Job-related Risks II [Factor IV], Threatened/Verbal and Physical Abuse [Factor V], Transportation Issue II [Factor VI], Client's Neighbors [Factor VII], and Potential for Violence [Factor VIII]) were forward entered into a regression model, five Factors (I, II, III, V, and VI) made sizeable contributions to HHAs' job satisfaction. In total, the five factors added an additional 12.5% of the variance accounted for above the 2.3% accounted for by age, tenure, and union membership. It is noteworthy that the factor that accounted for the most unique amount of variance in job satisfaction was Threatened/Verbal and Physical Abuse ($\beta = -0.188$). In addition, this factor also had the highest mean endorsement across all eight factors (Fig. 1). That is, this factor was reported to be more of a concern (on average) for the largest proportion of HHAs (although the individual items addressing cockroaches and cigarette smoke from the Environmental Exposures factor had the highest level of endorsement for single items). The other factors following in order of mean endorsement were: Environmental Exposures (Factor II), Transportation Issues I (Factor III), Household/Job-related Risks I, and Transportation Issue II (Factor VI-Directional change of β weight). Five of the seven factors that were related to job satisfaction in the bi-

variate analysis maintained unique variance accounted for in the regression model. It thus appears that job satisfaction is potentially multi-determined and that any type of prevention or intervention will require multi-faceted approaches.

It should also be noted that the 35 items of the survey, for the most part, factored into well-defined eight domains which should help to organize our thinking about and understanding of the myriad characteristics of the patients' households and neighborhoods that may adversely impact the worker.

These results also complement an important body of work by Ellenbecker and Byleckie. They developed and tested a home health care nurse job satisfaction scale that was theoretically grounded.⁷ Their 30-item scale that predicts job satisfaction in home health care nurses consists of nine factors; five factors addressed intrinsic job characteristics (eg, autonomy, group cohesion) and four factors addressed extrinsic characteristics (eg, salary, benefits, stress and workload).⁵ Together, the nine factors accounted for 66% of the total variance.⁸ In a more recent publication, Ellenbecker et al, have reported a refinement of their scale which now contains eight subscales (relationship with peers, relationship with organization, relationship with physician, salary and benefits, stress and workload, relationship with patients, professional pride, and autonomy and control).²⁰ Although the Ellenbecker revised scale is designed for nurses and not HHAs, these other well-defined characteristics of home health care work most likely impact HHAs. Although Ellenbecker et al's scale is very comprehensive it does not include the factors that were found to be related to job satisfaction and job retention in the current study. It may be an advantage to supplement Ellenbecker's scale with the sub-scales that were reported in the current study. Taken together with household/job-related hazards, this potentially could account for a much

larger proportion of the variance in job satisfaction. However, it is not clear whether the working conditions of the HHAs are similar in scope and in intensity to those conditions that confront the home health care nurse. Future studies that adapt Ellenbecker's scale for the HHAs workforce may prove to be informative in further delineating the various characteristics of work that impact job satisfaction among home health care workers.

Recognizing the impact that these factors may have on job satisfaction is important, but implementing change to address some of these factors may be a challenge. For instance, the experience of being threatened by a patient, the patient's family, patient's pets or by a patient's neighbors was not a rare occurrence in this study. This experience can be alleviated to an extent by educating HHAs in terms of handling difficult patients or family members. Self-defense training and use of animal control measures (eg, insisting that aggressive pets be secured prior to the HHAs' arrival) can also help to decrease the potential threat associated with people and/or animals. Access to cell phones that can directly connect to a home base agency or security force may provide the HHAs with a greater sense of security and thus lessen the perceived threat. Providing HHAs with trained escorts would also serve to increase a sense of security. Environmental exposures present more of a challenge in terms of risk reduction. Exposure to pests such as cockroaches and mice/rats is difficult to control because they are more of a community problem than household-specific. Exposure to air pollutants and peeling paint can be reduced by implementing environmental controls, but these are generally outside the scope of the home care sector. Something agencies could do to improve the overall quality of the job might include the development of an easy-to-use checklist on household conditions for initial and periodic assessments. This could be coupled with

a list of simple solutions for at least some of the problems, such as the use of hand sanitizer gels when hand washing is compromised.

Although it is extremely important to identify the factors that contribute to job satisfaction, it is also important to determine whether the same factors contribute to job retention. In order to ascertain this among our current sample, the same regression technique that was used with job satisfaction was utilized with job retention. After step one of the regression model where age and union membership accounted for 3.1% of the variance, only two factors entered the regression equation. The two factors which added an additional 6.2% in the variance of job retention were: Threatened/Verbal and Physical Abuse and Potential for Violence. All of the other factors that were related to job retention in the bivariate analyses were no longer statistically significant. It appears that factors that contribute to job satisfaction may not contribute directly to job retention. These results suggest that certain factors may contribute to job satisfaction and that job satisfaction may then contribute to job retention. To test this possibility, a third regression analysis was conducted where job satisfaction was entered on the second step of a regression analysis for job retention. This third regression analysis revealed that job satisfaction added an additional 13.8% of the job retention variance above the 3.0% that age and union membership accounted for on the first step. The final step of this analysis had Factors V (Threatened/Verbal and Physical Abuse) and VIII (Potential for Violence) entering the equation which added an additional 2.4% of the variance. An examination of the β coefficients revealed that Factor V had its β coefficient reduced by 50% from the previous analysis where job satisfaction was not part of the equation. This reduction in variance accounted for suggests that job satisfaction may be acting as a partial mediator between

the relation of Factor V and job retention. That is, feeling threatened and being subjected to verbal and/or physical abuse may contribute to job dissatisfaction which in turn determines whether or not an HHA decides to leave his/her current occupation. Since the β coefficient did not decrease to zero, Factor V appears to continue to have not only an indirect effect (through job satisfaction) but also a direct effect on job retention. Thus, even though intervention programs may impact job satisfaction, this would only be part of the issue. The other part that would still need to be addressed is the direct impact of Factor V. The same cannot be said for Factor VIII (Potential for Violence). This factor was not influenced by job satisfaction, and thus maintained its apparent direct effect on job retention. What appears to be emerging is a complex set of relations among multifaceted variables. This study opens the door for further investigation into the major determinants of job satisfaction and job retention among HHAs.

Limitations

A number of potential study limitations are acknowledged. First, as with all cross-sectional designs, causality cannot be ascertained. However, this design is a cost-effective first step upon which more robust studies can be built. Second, we sampled HHAs who volunteered to participate from only one largely urban city, thus these results may not be generalizable to the nationwide population of HHAs as a whole or to those HHAs who do not participate in surveys. Going forward, these types of studies should involve random sampling of HHAs from other geographical locations and with more diverse settings and work populations. Third, although our survey was anonymous, we did ask potentially sensitive questions (eg, drugs and firearms in the home) and this may have resulted in participants' providing socially desirable answers. Many of the HHAs may have been afraid of providing forthright re-

sponses for fear of how this might affect their employment status. This is an on-going concern with all survey instruments that address sensitive and possibly illegal (and therefore reportable) activities. Fourth, this study did not examine potential moderator variables which may suggest that some of the observed relations may be stronger or weaker for certain groups of HHAs. Fifth, the outcome measures were limited to single items tapping job satisfaction and job retention. It will require future research to incorporate multiple assessments of each outcome variable. Sixth, measurements of all variables were gathered via a self-report survey and thus there could be a methods bias. Future research may want to assess the patient's perspective on the factors that may influence the well-being of the HHA. Obtaining data from the HHAs' supervisors and colleagues would strengthen our understanding of the factors influencing the job satisfaction and job retention among HHAs. Seventh, since a number of the survey items addressed whether the HHAs had ever been exposed to various environmental contaminants/irritants and whether the HHA had ever felt threatened for any reason, it is not clear as to whether these potential past experiences were in fact influential in the prediction of job satisfaction and job retention. Future research should include not only any exposure from the past but more importantly should include current exposures. A final limitation of the current study involves the job retention variable which was assessed by the question "For any reason, are you planning to leave home health care within the next 12 months?" Without assessing why the HHA planned to leave, it becomes somewhat problematic to determine whether the actual intent to leave was in fact related to the variables that we studied. Future research will need to pose questions that directly ask the HHA "If you are planning to leave the profession, please provide us with the reasons why you want to leave."

Conclusion

This study provides new evidence on the role of the household environment in HHAs' job satisfaction and job retention. The study also provides evidence of the close relation between job satisfaction and job retention and shows that job satisfaction may be a partial mediator between the relation between exposure to threats and violence and job retention. Additional study is warranted to further explore the impact of the household environment on HHAs' health and well-being (eg, mental and physical health), as well as the effectiveness of the use of more complex models that combine both household and health care hazards. Additional studies should be conducted to assess both of these work characteristics as well as the intrinsic and extrinsic work characteristics in the home care setting as described by Ellenbecker et al.²⁰ As noted, it would be of interest to explore these issues across other geographic locations and in other types of communities. Eventually, it might prove beneficial for the sector as a whole to consider the development of best practice guidelines for agencies in terms of managing adverse household conditions. This might provide important guidance, especially to smaller agencies. The overall effect of addressing adverse conditions, where feasible, may not only improve the quality of work life for HHAs but also the quality of patient care. Additionally, it may help reduce the burden of high turnover that many agencies face. Therefore, the implementation of interventions that address household hazards could potentially improve the well-being of the HHAs, the care that they provide to their clients, and the stability and productivity of the agencies that provide these services.

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