

Slips, Trips, and Falls Among Home Care Aides

A Mixed-Methods Study

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Objective: To address the gap of knowledge about slips, trips, and falls (STFs) among home care aides (HCAs) who work in clients' homes. **Methods:** This mixed method study used survey and focus group data of HCAs in a Medicaid-funded home care program. **Results:** STFs were common with over 12% of HCAs reporting occurrence in the previous 12 months, of whom 58% fell to the ground. Both survey and focus group data identified ice, clutter, workload, rushing and other hazards. Focus group data explained the reasons for not reporting STFs, even among those who sustained injury, and added HCAs' voices to the understanding of causes, consequences and prevention strategies for STFs. **Conclusions:** Empowering HCAs with knowledge, training, and involvement may transform "near miss" STFs into opportunities to prevent STFs among care workers and their clients.

Keywords: aging, care work, caregiving, culture of health, fall prevention, front-line workers, health protection, home care, home fall hazards, near miss, older adults, organizational commitment, precarious work, under-reporting, worker well-being, worker safety

Slips, trips, and falls (STFs) have been identified as major sources of work-related injuries among healthcare workers.^{1,2} Previous research has promoted efforts to prevent STFs among hospital and nursing facility workers. However, much less work has been done for home care workers who work in the private homes of their older or disabled clients that cannot be easily assessed for workers' STF risks.³⁻⁵

Home care aides (HCAs), also called homemakers, personal care assistants, and personal attendants, help older adults with their daily activities. These services enable older adults to stay in the community and to avoid premature nursing home admission. These

workers are typically middle-aged or older women, many of whom are minorities or immigrants.^{6,7}

Identifying STF risks for HCAs who care for older adults is important for a number of reasons. Falls result from an interaction of risk factors and situations, which are often modifiable. Risk factors can be classified as environmental factors (eg, poor lighting, loose carpets, and lack of safety lift equipment, slippery floors, stairs), task-related factors (eg, transferring heavy items or persons), or personal factors (eg, lower extremity weakness, poor grip strength, balance disorders, visual impairment, rushing).⁸ Many of those risk factors are shared by HCAs and their clients: HCAs' workplace is their clients' life space. Identifying and addressing HCAs' STF risks should promote safety not only among HCAs but also among their clients.

Falls are the most common causes of serious injuries among older adults, often triggering major functional declines.⁹ HCAs themselves are aging.^{6,10} Enabling HCAs to identify and address STF risks in their clients' homes would not only enhance HCAs' knowledge and competency but also empower HCAs to work proactively with their client, family, and other health care professionals to prevent STFs for their clients and themselves. This is especially important in home care, where engineering and work practice interventions to prevent STFs (eliminating uneven floor surfaces or other structural hazards, eliminating clutter, providing transfer equipment, arranging for additional staff to help with certain tasks, etc.) are not as straightforward as in hospitals or nursing facilities. HCAs work independently in their clients' private homes. Supervisors can rarely observe HCAs' day to day work environments. HCAs need to assess their own work environments and identify risks. However, they often need to engage their clients and their clients' families to remediate identified hazards.

To address the knowledge gap for occupational STF risks in home care, this mixed methods study examined the incidence and circumstances of STFs reported by HCAs who care for adults aged 60 and older with disabilities and limited assets in a large Medicaid and state-funded home care program in Chicago, Illinois. Specifically, we examined (1) how often HCAs experienced STFs in or immediately outside clients' home in the preceding 12 months, how STFs occurred (ie, fell to the ground, floor or lower level in any of the STFs, hurt), and how STFs were handled (ie, received medical attention, reported to their supervisors); (2) whether HCAs' personal factors (age, sex, race, job training and tenure, workload, and caring for their relatives vs caring for non-family clients only) were associated with STF incidence; and (3) how HCAs' voices could help identify causes and consequences of STFs as well as strategies to prevent STFs and promote well-being in HCAs and their clients.

METHODS

This report combined qualitative and quantitative research obtained through two projects conducted as part of an overarching university, labor, management tripartite research partnership in which all research protocols, surveys, focus group questions, and interventions were developed collaboratively. Funded by two separate grants, the two projects were reviewed and approved by separate human subjects review committees. The HCA survey conducted in 2007 (April to September) provided not only

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quantitative data but also qualitative data (ie, response to open-ended questions about what happened and what HCAs were doing). Data from the focus groups conducted in 2008 (May to June) provided information about how various factors could interact with each other to develop STF outcomes over time and what HCAs proposed to address STF risk factors. Results were synthesized to offer policy and practice recommendations for preventing STFs and promoting safety and well-being among HCAs and their clients.

HCA Survey: Sample, Measurement, and Analytic Strategy

Survey participants were recruited from two home care agencies contracted with Illinois Department on Aging to provide in-home services for clients aged 60 or older with disabilities and limited assets ($\leq \$17,500$). HCAs filled out a self-administered survey at the start of state-mandated employer-based training sessions. Of the total 1180 HCAs attending the training sessions,¹¹ 1030 HCAs responded (87.3% response rate).

STF-related questions, developed by the first author and her colleagues, were incorporated into the survey. STF incidence was assessed by asking HCAs whether they experienced STFs in or immediately outside clients' homes in the past 12 months and if so, how many times. HCAs who experienced at least one STFs were asked to think of the most recent event to indicate if he/she reported the event to his/her supervisor and if he/she received medical care. They were also asked to briefly describe what happened and what they were doing immediately before the incidents happened.

HCAs' characteristics considered for analysis included age (years), sex, race (Black/African American, vs non-Black/African Americans), education (four categories: reference = less than high school, high school diploma, associate degree or some college, bachelor's degree or more), having healthcare-related certification (as certified nursing assistant, geriatric nursing assistant, medical assistant phlebotomist, home health aide, emergency medical technician, licensed practical nurse, or pharmacy technician; Yes or No), job tenure (years working as a home care aide), workload (the number of clients HCAs cared for in a typical week, continuous variable), an indicator of having another paying job other than working as a HCA, and "family HCA" (paid to care for a family or relative, vs "non-family HCA" caring for clients assigned by the home care agency). Illinois allows relatives of older adults who are eligible for publicly funded home care to be their HCAs as long as they are hired by home care agencies that are contracted with the state to provide home care. We hypothesized that family HCAs may be more likely to experience STFs to the extent that they may perform tasks beyond what HCAs usually perform. Family HCAs may also have broader authorities to address identified risk factors in clients' homes.

We carefully assessed missing data, which occurred as HCAs filled out a self-administered questionnaire in a large in-service training session. Our general strategy was to maximize information available to impute the data. For example, if workload (cases per week) was missing, the number of cases per day was used; if job tenure was missing, years worked at the current agency were used. The analytic file consists of 741 HCAs who, after the imputation, did not have any missing data for variables included in our multivariate analysis models. The 741 records used in the analysis represented 72% of the 1030 survey respondents.

Descriptive analysis depicted STF incidence. Bivariate and multivariate logistic regression analysis examined how HCAs' characteristics were associated with STF incidence (any STFs over the past 12 months). Poisson regression analysis (the number of STFs experienced in the past 12 months) produced results consistent with logistic regression analysis. This paper presents logistic regression analysis results.

Qualitative data (short answers to open-ended survey questions) were used to understand the circumstances leading to HCAs'

STFs reported by the survey respondents. To make the best out of the available short responses in the survey, all the 1030 survey respondents, rather than the analytic sample ($N=741$), were included in the analysis. Two investigators independently coded HCAs' short answers to two open-ended questions (what happened, and what HCAs were doing immediately before they slipped, tripped, or fell) to identify the location of the most recent STF incidence (inside or outside of the client apartment/house), and factors perceived to have caused or contributed to the STF (eg, client's home environment, ice related, rushing). After discussing the initial coding strategy with the entire research team, the two coders updated the coding scheme and coded the data. For inconsistent codes, the two coders discussed, with another investigator on the team as needed, and determined the codes by consensus.

Focus Group Study

Six focus groups were conducted with 44 English-speaking HCAs caring for older adults with disabilities in the state of Illinois in-home service programs, mainly the Department on Aging Community Care Program (CCP). Focus group participants were recruited in partnership with SEIU Healthcare Illinois & Indiana (previously SEIU Local 880). This partnership allowed us to recruit otherwise difficult-to-reach home care workers from eight employers using the methods that the labor union considers most effective in reaching HCAs: distribution of flyers, telephone calls, and door knocking by the union staff. The UIC research team and the SEIU director had regular weekly phone conferences to assess the progress of focus group recruitment efforts. Those who signed up for focus groups received a reminder letter 1 week prior to the focus group, followed by a reminder phone call 1 to 2 days before the focus group. Each focus group lasted 90 minutes, preceded by an icebreaking meal, informed consent, and a brief self-administered survey which included a subset of questions used in the larger survey such as STF-related questions. Focus group guides included questions about HCAs' experience with STFs, HCAs' views on what could lead to STFs among HCAs, current practice and training in falls prevention, HCAs' roles in preventing STFs, and HCAs' suggestions for preventing falls. The first author moderated each focus group, during which a research assistant took detailed notes. Immediately following each focus group, the research group (the first author, a research assistant, and occasionally a coinvestigator) held a debriefing session to identify and record major themes as well as unexpected or noteworthy findings. After five focus groups, the research team agreed that we had reached data saturation. We then held a validation focus group, where the research team presented summaries of the first five focus groups. The validation focus group participants agreed that we "got it right" and "got it all" and provided additional information on the selected themes. Each participant received an incentive payment of \$25 (\$10 per hour). Professionally transcribed data were analyzed to extract themes.

RESULTS

Sample Characteristics: Survey and Focus Group Participants

The survey participants included in the analysis ($N=741$) consisted mostly of female (92%), Black or African American HCAs (73%, Table 1). Russian-speaking Whites (18.6%), other Whites (3.1%), and others (5.3%, including Hispanic/unknown race, American Indians/Alaskan Natives, Asians, multiple racial/ethnic identities) constituted the "Other" racial category. HCAs were typically middle aged women, caring for one to three clients. One in four HCAs were hired to care for their older relatives/family members; the rest cared only for non-family clients. The focus group participants ($N=44$) were all African Americans and had characteristics similar to survey participants who were African American, except the focus group participants were older with

TABLE 1. Home Care Aides Characteristics: Survey ($N = 741$) and Focus Group Participants ($N = 44$)

	Survey Participants ($N = 741$)	Focus Group Participants ($N = 44$)
	Mean (SD)* or Percentage	Mean (SD) or Percentage
Age	44.7 (13.1)	N.A.
18–29	14.8	4.6
30–49	42.8	31.8
50–64	27.5	54.6
65+	5.8	9.1
Missing	9.0	N.A.
Female	91.6	95.5
Race		
Black or African Americans	73.0	100
Others [†]	27.0	0
Education		
Less than high school	19.7	18.2
High school diploma or GED [‡]	34.1	40.9
Associate degree or some college	32.5	34.1
Bachelor's degree or more	13.6	6.8
Certified	16.5	N.A.
Tenure (years as a home care aide)	6.4 (6.2)	8.5 (7.8)
Available for clients off-hours	52.6	N.A.
Other paying job	22.0	13.6
Number of clients in a typical week	2.8 (2.3)	1.7 (1.3)
Work hours in a typical week	28.6 (14.1)	28.8 (17.7)
Unpaid work hr/wk	1.3 (5.8)	N.A.
Care for family on the job	26.1	24.1

*SD, standard deviation.

[†]Others consist of Russian-speaking whites (18.6%), other whites (3.1%), and others including Hispanic/unknown race, American Indians/Alaskan Natives, Asians, multiple racial/ethnic identities (5.3%).[‡]GED: the General Education Degree.

the majority being aged 50 or older and had worked more years on the HCA job.

STF Incidence, Risk Factors, and Circumstances Among HCAs: Survey Data

Over 12% of HCAs (93 of 741 respondents) had experienced STFs in or immediately outside their clients' homes in the previous 12 months (Table 2). The number of reported STFs was one (36.6%), two (19.4%), or three or more (26.9%), while 17.2% did not indicate the frequency. The majority of HCAs who reported

any STFs had fallen to the ground ($N = 54$, 58.1%). Only a minority of HCAs reported any of the STFs experienced in the past 12 months to the supervisor ($N = 19$, 20.4%) or received medical attention ($N = 17$, 18.3%).

Bivariate and multivariate logistic regression analysis indicated that Black/African Americans had significantly higher odds of reporting any STFs in the survey than non-Black/African Americans (mostly Russian speaking HCAs): odds ratios (OR) = 2.08 (95% confidence interval [CI] = 1.17 to 3.70) and OR = 4.74 (CI = 1.95 to 11.52), respectively (Table 3). HCAs with the highest educational

TABLE 2. Incidence of Slips, Trips, and Falls in the Past 12 Months in Home Care Aide Survey Respondents

	Survey Participants Analytic Sample ($N = 741$)	Focus Group Participants ($N = 44$)
	N (Percentage)	N (Percentage)
Any STFs in the past 12 months*	93 (12.6)	17 (38.6)
Number of STFs among those with any STFs		
1	34 (36.6)	7 (41.2)
2	18 (19.4)	3 (17.6)
3+	25 (26.9)	2 (11.8)
No response	16 (17.2)	5 (29.4)
The home care aide:		
Fell to the ground [†]	54 (58.1)	10 (58.8)
Hurt in any STFs [‡]	N.A.	8 (47.1)
Reported to supervisor [§]	19 (20.4)	1 (5.9)
Received medical attention	17 (18.3)	2 (12.5)

*In the past 12 months, in or immediately outside your client's home, have you ever slipped, tripped, or fallen? Include any minor slips, trips, and falls (STFs)?

[†]Did you fall to the ground, floor, or lower level in any of these slips, trips, and falls? (Yes/No).[‡]Were you hurt in any of these slips, trips, or falls? (Yes/No) This question was asked in the focus group research but not in the larger survey.[§]Did you report any of these slips, trips, or falls to your supervisor? (Yes/No).^{||}Did you receive medical attention for any of these slips, trips or falls from a nurse or other health professional (the pre-focus group survey: "from a doctor, nurse or other health professional")?

TABLE 3. Logistic Regression Analysis of Any Slips, Trips, and Falls in the Past 12 Months Home Care Aides Survey Participants^a (N = 741)

Variables	Bivariate Analysis Unadjusted OR (95% CI)	Multivariate Analysis Adjusted OR (95% CI)
Age ^a	1.00 (0.98–1.01)	_ ^b
Female ^c	1.70 (0.66–4.35)	1.33 (0.50–3.59)
Black or African American ^d	2.08 (1.17–3.70)**	4.74 (1.95–11.52)**
Education ^c		
<High school diploma	Reference	Reference
High school diploma or GED	1.26 (0.68–2.33)	1.25 (0.67–2.35)
Associate degree or some college	0.88 (0.46–1.69)	1.04 (0.53–2.04)
Bachelor's degree or more	1.32 (0.63–2.80)	4.58 (1.63–12.86)**
Certified ^f	0.80 (0.43–1.50)	0.77 (0.40–1.48)
Available for clients after off-hours ^g	0.95 (0.62–1.47)	1.14 (0.70–1.87)
Other paying job ^h	0.59 (0.33–1.08)	0.64 (0.33–1.23)
Years as a home care aide [*]	1.01 (0.97–1.04)	1.00 (0.96–1.03)
No. of clients in a typical week ^a	1.11 (1.03–1.20)**	1.13 (1.03–1.25)**
Work hours in a typical week ^a	1.01 (1.00–1.03)	1.00 (0.98–1.02)
Unpaid work hours ^a	1.01 (0.97–1.04)	1.01 (0.98–1.05)
Caring for family member(s) on the job ⁱ	0.81 (0.48–1.35)	0.96 (0.54–1.72)

OR, odds ratio. CI, confidence interval.

^aContinuous variables.

^bAge was not included in the multiple logistic regression model due to large missing data. A separate multivariate logistic regression analysis in the sample with the Age variable (N = 674) indicated no significant association between age and STF (OR = 0.99; CI = 0.97–1.01).

^c–ⁱCategorical variables. The reference categories are as follows: ^cMale, ^dOthers (Russian-speaking whites, other whites, and others), ^e<High school diploma, ^fNot certified as Certified Nursing Assistant, Geriatric Nursing Assistant, etc. ^gNot “make yourself available for clients to call you at home after off-hours,” ^hNo other paying jobs, and ⁱCaring for non-family member only on the job. The number of STFs reported in each category are as follows: ^cFemale (88), Male (72); ^dBlack/African American (88), Others (5); ^e<High school diploma (17), High school diploma or GED (36), Associate degree or some college (25), Bachelor's degree or more (15); ^fCertified (13), Not certified (80); ^gAvailable off-hours (48), Not available (45); ^hOther paying job (14), None (79); ⁱCaring for family (21), Non-family clients only (72).

**P < 0.01 two-sided.

attainment (Bachelor's degree or higher) had significantly higher odds of reporting STFs (OR = 4.58, CI = 1.63 to 12.86; reference category = less than high school), controlling for other variables in multiple logistic regression analysis. Workload was significantly associated with STFs: caring for an additional client per week was associated with 13% higher odds of STFs in both bivariate and multivariate analysis (OR = 1.11, CI = 1.03 to 1.20, and OR = 1.13, CI = 1.03 to 1.25, respectively). Gender, job tenure, and caring for family or relatives on the job (vs caring for only non-family clients) were not significantly associated with STFs. HCAs' age had no significant association with STFs in bivariate analysis nor in multivariate analysis (OR = 1.00, CI = 0.98 to 1.0, and OR = 0.99, CI = 0.97 to 1.01, respectively, in the sample of N = 674, excluding those who did not report age).

What Happened, Where, and Why?

Short written responses to two open-ended survey questions revealed circumstances surrounding the most recent STF experienced by HCAs. Approximately, 50% of the survey participants who had experienced any STFs in the past 12 months provided brief written responses. As shown in Table 4, 37 STFs (over 60% of valid responses) occurred outside the client's home, in contrast to 24 STFs (40% of valid responses) inside. Ice outside the client's home was the single most frequent causal or contributing factor identified by the HCAs, associated with STFs while performing tasks (taking out the garbage), arriving, or leaving the client's home. Within the client's home, wet floors, whether caused by spills or from cleaning, were frequently identified, as were other trip hazards (rugs, cords, clutter), stairs, and rushing.

Focus Group Data

Focus group data provided (1) in-depth information on STF incidence and circumstances, (2) potential causes of STFs from HCAs' perspectives, and (3) HCAs' voices on STF prevention for themselves and for their clients.

Incidence of STFs

More than one-third of the focus group participants (N = 17, 38.6%) had slipped, tripped, or fallen in or around clients' home in the previous 12 months (Table 2). While eight people (47.1%) were hurt in any of those STFs, only one person reported to his/her supervisor and two received medical attention.

Causes or Contributing Factors

Focus group data supported the survey results, indicating that a substantial proportion of STFs occurred outside their clients' homes and while commuting. Data from focus groups corroborated the larger survey data by showing that ice in winter, wet floors, rugs and other objects on the floor, steps or stairs, rushing, or multitasking contributed to STFs. These results are shown in the summary of the short written responses to open-ended questions in the pre-focus group survey (Table 4) and in quotes from in-depth description of how HCAs experienced STFs (Table 5).

When asked to identify potential causes of their STFs, HCA focus group participants mentioned workplace environmental hazards including rugs, cords, loose stairs, equipment (eg, a wheelchair, too much medical equipment, the walker), clutter, ice, dark lights, and spills and objects on the floor, and slippery floors (combined with worn shoes). Focus group data revealed how a number of factors contributed to HCA falls to the ground while doing home care tasks (eg, carrying loads such as laundry, groceries, or garbage; cleaning a shower) or helping clients (eg, bathing a client). Other factors identified included stress (eg, “People don't know how stressful we're going through something not only physically but mentally, which could cause you to fall.”) and behavioral factors, such as multitasking, lack of focus, moving too fast, and rushing.

Family members were described as either helpful or creating further obstacles. One worker said: “Clients have grandchildren and they spill something. And if [the spill] is clear it is hard to tell since it

TABLE 4. Circumstances Around the Most Recent Slip, Trip, or Fall: Short Written Responses of Home Care Aide Participants Who Experienced Any Incident*

	Survey Participants (N = 122 [†]) N (Percentage [‡])	Focus Group Participants (N = 17) N (Percentage [‡])
Where		
Inside	24 (39.3)	6 (46.2)
Outside	37 (60.7)	7 (53.8)
Missing	61 (N/A)	4 (N/A)
Causes or contributing factors		
Ice	20 (32.3)	2 (14)
Wet floors (mopping, spills)	12 (19.4)	— [§]
Rugs	4 (6.5)	2 (14)
Other objects on floor (food, trash, no ice)	7 (11.3)	— [§]
Steps, stairs (indoors and outdoors, no ice)	9 (14.5)	2 (14)
Rushing, running	4 (6.5)	2 (14)
Carrying loads (laundry, groceries, garbage)	8 (12.9)	5 (36)
Helping client (lifting)	1 (1.6)	3 (21)
Other indoor (step stool, untied shoe)	2 (3.2)	2 (14)
Other outdoor (uneven surfaces, car, bus)	6 (9.7)	3 (21)
Missing	60 (N/A)	3 (N/A)

*Home care aides were asked to think of their most recent slip, trip, or fall (STF) in or around their client's home and to provide a short written description of what happened and what they were doing right before it happened. The same question was used in the survey and in the pre-focus group brief survey. Data were coded by two researchers.

[†]To maximize the information available in the responses to open-ended questions, all the 122 respondents who reported any slips, trips, or falls in the entire sample (N = 1030) were included in the analysis, as opposed to the 93 respondents in the analytic sample (N = 741, see Table 2).

[‡]The percentages were calculated based on the valid responses for each item, excluding respondents whose written responses were missing or unclear.

[§]Although no home care aide reported wet floors or other objects on the floor in the written survey, both were reported in the focus group discussions.

is dark light." HCAs reported that their own chronic conditions, such as arthritis in the knee, caused falls. One HCA said: "Mostly I fall on my way to work. . . . I got real bad arthritis. So I can't really walk down the stairs. . . . If I try to walk normally, I'll fall down."

Consequences

Focus group participants described events causing pain and embarrassment. One HCA who had fallen on ice said:

...I didn't (go to the doctor or tell my supervisor). . . . I said, 'Well I'll give it a couple of days to come around and maybe, whatever it is, it'll come.' But it stayed sore for a couple weeks. And then I would rub alcohol on it and put a hot towel on it. And, Thank God, it just got better.

Another HCA with an ice-related fall reported:
And I couldn't hardly get up because I have arthritis in my knees.

An HCA who fell while assisting a client described her injury:

And I did like this (motions) and my knee. . . . you know all the sudden like (pain sounds) oh! . . . I was able to endure the pain but I was limping for about 2 weeks. I did go to the doctor and had x-rays and then they did a MRI. . . .

The consequences of a fall may not be felt immediately:
...I didn't feel it 'til an hour later. I was there (in the client's house) and all the sudden this pain is so bad and it starts stiffening up. I had to call my boss. And I chose not to go to the hospital, because I know how my arthritis is anyway. And thing like that so about 3 days later, I got better and I kept on working and it got better.

HCAs keep working despite injuries, because they "can't afford to take time off." HCAs usually don't have sick days or personal days. This theme was consistent across all the focus groups: "No, I didn't miss [work] days. You can't. Don't make

enough money"; "I've had surgery one day and gone back to work the next day. . . . You literally have to go to work sick or in pain."

HCAs are faced with a choice between not reporting STFs (ie, no time off to get paid) and reporting (and possibly receiving proper medical attention), as summarized by an HCA:

I can't afford to take off from work. So it is a choice. . . . it's what you call a double jeopardy. When you're dealing with this, I'm like up in the air. You have a lot to think about, even if you really hurt yourself. Some people take the route that their health is not important, unless it really bothers them. . . . But if you do it later, later detect it (a fall injury) and tell the company, they like, 'Well, why didn't you tell us the first day. . . . they're looking at you like you want to sue them or something. So you know liability is very important.

One of the major themes was STFs' often delayed, long-term effects on HCAs. A fall led an older HCA to continue to fear falling 1 year later.

. . . and now, ice out there. I be so afraid that I'm gonna fall. Like every step that I'm making feel like I'm stepping on ice.

Serious falls are rare, but if they happen, they have major impacts on their clients and the employers as well as on HCAs themselves who would be out of work for an extended period of time.

Because I felt it right away. . . . I did call my supervisor. And she came in where I was at (the hospital). I said I couldn't talk too much because I was in serious pain. . . . I'm telling you they was giving me morphine and it still wasn't helping. I was in pain. . . . And I couldn't get in the bed like when you put your knee in the bed to do that. I pulled a bad muscle. That's the worst thing you can get, a bad pulled muscle. I took time off for . . . 4 weeks.

Except for instances in which the HCA felt excruciating pain immediately or the fall involved the client, HCAs seemed to refrain from reporting their own STFs to their supervisors, because "when

TABLE 5. Circumstances Around the Most Recent Slip, Trip or Fall (STF): Focus Group Descriptions of Contributing Factors of STFs

Factors	Quotes
Ice	Well, when I fell, I was...walking down the street, in front of my client's house and I stepped on some ice and I fell. I was going to this client's house. I didn't see the little thin ice... The garbage men out there. You think they came and helped me up? Helped me, no. I have slipped in front of a client's house on ice. I slipped and fell. Then I got up and really I crawled 'til I got out the ice and then got up. And went and rang the doorbell. And went on to work
Wet floors	Sometimes they mop and wax their floor. And if their wax is not dry, oh my goodness! There you go flying... I had walked in this person's house. ..And didn't tell you they waxed it.. And didn't tell me that the floor was wet... But I did catch myself, my legs slid out ... Some of them have water dripping...and...don't even know they have it. And then you walk in, you step in it... So you have to be careful. And either way you gotta protect yourself as well as them. Clients may have a bowel movement or wet themselves and either a home care aide or a client may slide in it.
Rugs	...but you walk across it [the rug] and you go, when you get ready to pick your other foot up to move, it goes and you go... The rugs actually slide across the floor as you walk... So I would take them up but she would put them back down. But I...tripped many [a] day on that runner. You know, because him with his walker and his wheelchair sometimes, you know, it comes, turns up.
Other objects on floor	...because you got the TV cords, ...the oxygen tank and the telephone cord with all of its little long extension cords... She would take the phone and put a long 50' cord on it and take it all over the house.
Steps, stairs	I slid on a (used) diaper (thrown by the client)... sometime I'll step on them and slide. But I don't fall. ...coming up the stairs, loose stairs... it's so loose, you know it's shaking, ...because that wood was rotten. My falls have just been because I'm rushing trying to get to her aid. Rushing up steps... The steps are shoddy, very shoddy. And they're not done right. What I do is I grab hold to the railing to go down in the basement and the same way to come up. I have one hand on the railing and I put the laundry basket down and I get a plastic bag to pull it back up the stairs.
Rushing or distracted	So I get him out the car, you know I told him... just take your time, you know, because they had already practiced him on the steps, they knew he had steps to go up before they released him and they said that he could go up the steps. And he makes one step, then he goes to make the next step and he just went all the way down, me and him both. You're multitasking... Trying to cook here. You want to wash dishes here. And then you want to get stuff out the refrigerator and you want to check on your clients, so you're doing all these things right here, so you might fall... Because your mind is focused on 5 or 6 different things. You got 100 things on your mind, you gotta prepare meals, they gotta get ready to go to maybe the doctor. You want to do some laundry before you go, you know your cell phone ringing and your families call you about something. ... not focused so you might do something you know to cause yourself to fall... if you've had a real hectic day, and you must you know your mind's not with you, you know you might trip and fall over something. If I rush, ...I'll fall, you know, but if I focus on one thing and do that one thing, I'm alright. So I try not to fall too much while I'm working.
Carrying loads	And I fell .. outside...I had to empty my client's garbage ... And I stepped over the snow to put the garbage in but I didn't see the ice up under the snow. I was taking my client's garbage out and you would think that they would have the walkway clean and it was in the back... and I didn't look and obviously there was some slippery ice and I hit this elbow.
Helping client	...I sort of like tripped because he's coming ... about 400 some pounds. So I really didn't want him to hit the floor. I have a client that's wheelchair bound...no movement from the waist down. So I was trying to lift and he has an electric wheelchair and at the time he was trying to get out the bed to the wheelchair, but he couldn't get the strength to get out. Trying to get him (the client) out of the bathtub, and assisting, and he went to try to go down on me...
Other indoor	It was some shoes I had on and I was going up the stairs and kind of missed the stair a little bit and I kind of slipped a little bit and I kind of grabbed on to the banister but ...
Other outdoor	And I turned around to place something in the garbage and being tired I tripped on my own feet. Just walking... it was a rail out in front of these people house... And I felt something pop. And it went back in place and I got up and walked like it wasn't nothing wrong with me... And I was crying in pain.

you call and tell your supervisor, what can they do? They can't do nothing."

An HCA said: "you might get in trouble by reporting it [a fall] sometime." The supervisors may say that a worker was not in a right position. Some HCAs did not think supervisors wanted to hear about them falling unless it involves a client, adding that supervisors do not want to do the paperwork. However, at least one HCA said that her supervisor showed concern for her when she fell.

Furthermore, the worker is afraid to lose her client. "If you have a client and you get hurt taking care of that client even though you don't report it...you suck it up and you keep on going, and if

you are not doing your duties, the client can get rid of you because you're not up to the performance of it."

HCAs' Voices on How to Prevent Falls Among Themselves and their Clients

Focus group data indicated that HCAs are already concerned about preventing STFs for themselves and their clients. They reported observing the client and the workplace environment, and using caution around hazards. One HCA said, "I think safety preventions depend on how well you know your client... I think observation first of all is a preventive measure." HCAs shared with

each other the methods and tips that they had developed themselves for observing the client and the workplace environment. They also engaged in negotiation with clients and their family members, for example, to remove trip hazards such as area rugs, or to do exercise. One HCA said:

I just had to tell her husband (of the client with cognitive impairment), “I am sorry but I’m not gonna be responsible for your wife falling because you won’t take this rug up.” I said, “If you make the rug stationary where it will stay in one place, that’s fine. . . . I say you wouldn’t want her to fall and break a hip. . . .”

Some HCAs just take action: removing clutter, removing or changing a rug, keeping all tops screwed (“keep all tops screwed [to prevent spills], but not that tight [so that clients can open]”), and communicating with supervisors to have clients get rid of their “stuff” to receive home care. One HCA said:

I had to actually tell my client’s children, “I was not gonna be responsible and every day that I work I would take the rug up off the floor. Why? Because I can see it (an accident) waiting to happen. . . . I’ve got to be here with her, and it’s just me and her, this is what I have to do not only to protect myself but to protect your mother.”

HCAs also help clients perform activities of daily living (standing, walking, taking baths, putting a client to bed) safely, in order to prevent STFIs in themselves and their clients. HCAs additionally reported assisting clients in performing mild exercise activities, as described as follows:

Another way that I try to help my clients is to tell them. . . . It’s a program . . . on television, channel 20, 2:30, Sit and Be Fit. . . . I try to, because they say that it helps their bones stay stronger and it helps them stay balanced, which will help.

Not surprisingly, HCAs face barriers such as clients’ resistance to make appropriate changes in the house. Some home care workers call their supervisors to report on the clutter in a client’s home so that the house can be cleaned up to prevent injury. One HCA who has a supervisory role said: “We don’t want a client to fall and hurt themselves. We can’t send a home maker in there because she [a client] got too much stuff in there and that home maker can get hurt.”

Asked to provide policy or practice recommendations, HCAs suggested using salt to remove ice, providing proper training (ie, hands-on training, not video training; “You gotta know how to bend and whatever. . . because you could hurt yourself as well as them [clients]”), workshops by skilled professionals, proper gear (shoes, uniform) and equipment (“The company needs to invest in the equipment for workers, and workers need to know how to use it.”), removing clutter, establishing a routine schedule (to minimize risks for falls), and providing exercise for clients and HCAs (eg, exercise together with a client).

DISCUSSION

This mixed methods study demonstrated that STFIs were common among HCAs, with more than 12% of those surveyed reporting an occurrence in the previous 12 months. Only a fraction of the STFIs were reported by HCAs to their supervisors. The data from focus groups clarified that, even among those who sustained injury, few reported their STFI to their supervisors or received medical attention and that the underreporting was caused by their concerns about lost pay from taking time off, delays in feeling or recognizing the effects of an actual fall, social embarrassment, perceived difficulty communicating pain as a subjective complaint, and the sense that nothing would be done. HCAs reported fear of

bringing bad news to their supervisors, of being reprimanded by their supervisors, and of losing their customers and income.

Multivariate analysis indicated that African Americans had significantly higher odds of STFIs than others in this survey, who were mostly immigrants from Russia. HCAs’ workload was significantly associated with STFIs. This may reflect increased exposure to STFI risks, or to fatigue, stress and “busyness.” Age was not significantly associated with STFIs. Although age did not predict STFIs incidence in our sample of HCAs, age is a known predictor of increased severity following falls and may have been reflected in our focus group results with older HCAs reporting prolonged recovery.¹² While serious falls were rare, older HCAs in particular reported exacerbation of underlying arthritis and subsequent fear of falling. STFI incidence was higher among HCAs with more educational attainment, similar to previous findings that HCAs with higher levels of prior training had an increased likelihood of experiencing bloodborne pathogen exposure, suggesting that HCAs with higher education or training may have assumed roles or tasks that may have exposed them to higher risks.¹¹ Alternatively, those with higher education or training may have completed the survey more thoroughly, for example, by reporting slips and trips that did not result in falls or injury.

HCAs identified a number of environmental, personal, and behavioral risk factors inside and outside their clients’ homes and while commuting. These included clutter and a number of trip hazards, and being hurried, among others. Ice and weather conditions played a disproportionate role and are of concern for low-income elderly clients as well. The dual hazard of falls on the one hand, and of adverse cardiovascular outcomes from the physical work load of snow removal, on the other, highlight the need for community-based snow removal interventions to assist both the clients and the workers who serve them. Focus group data revealed how HCAs could sustain serious injury from falls while assisting clients.

HCAs reported taking a number of actions and making a number of recommendations to prevent STFIs and were interested in receiving additional training that would allow them to expand their role in home injury prevention. These HCAs, like other frontline workers, expressed strong interest in having a voice in care plans both to have their observations valued as well as to enable them to participate more fully in interventions.¹³

Furthermore, workers’ STFI near misses may predict clients’ falls that could be prevented. A near-miss report that is simple and quick has helped avoid worker reluctance to report incidents in other settings.^{14,15} Using near misses as opportunities for problem-solving that involves clients, HCAs, supervisors, and employers may help identify hazards and implement interventions to avoid future harm.

This study has a number of strengths and limitations. The survey and focus group data complemented each other to produce findings about the incidence and circumstances of STFIs in HCAs from the HCAs’ own perspectives. STFIs are difficult to define and subject to recall bias. Slips and trips without significant consequences may not be remembered. Thus, by design, the focus group study used a subset of the questions included in the survey. This unique design allowed nuanced understanding of HCAs’ perspectives hidden in the survey data. The survey data provided a snap-shot picture of STFIs in the past 12 months experienced by a relatively large number of difficult-to-reach HCAs, while the focus group data revealed a longitudinal picture of the causes and consequences of STFIs through HCAs’ stories that cannot be captured by a survey. The survey was distributed to all the HCAs who participated in a home care agency-sponsored state-mandated in-service training and thus targeted all the applicable HCAs, regardless of their motivation for participating in the study. The focus group study, on the other hand, recruited HCAs from several home care agencies on a

voluntary basis and thus were likely to be more motivated and vocal than non-participants. This may explain the higher incidence of STFs among focus group participants than among the survey participants. This selection bias can be justified because focus group research was intended to allow nuanced understanding of the phenomena examined in the survey, and not designed to involve a “representative” sample of HCAs. The relatively small number of HCAs who experienced STFs in the survey (93 of 741 respondents) limited our ability to investigate various HCA characteristics that may be related to STFs. This research focused on HCAs working in unionized home care agencies in one city in one state. This is a limitation given that states vary greatly in how they finance and deliver publicly funded long-term services and supports, for example, whether and how older adults can receive care from paid family members. However, our geographic focus allowed us to conduct in-depth research and to control for extraneous state- or municipality-level factors. Despite the limitations, our research results revealed HCAs’ perspectives on workplace STFs and inform efforts to promote health and safety among home care workers and their clients.¹⁶

CONCLUSION

Home care is one of the fastest growing industries in the United States as the federal and state governments strive to “rebalance” the long-term care system from a nursing home-based system to a system with more emphasis on home- and community-based care.^{17,18} Empowering HCAs with knowledge, training and involvement is critical for STF prevention given that their workplace cannot be easily accessed or intervened by external assessors. HCAs should be encouraged to report “near miss” STFs, or STFs that did not lead to injuries as an integral part of interventions that provide opportunities to prevent STFs in and outside home care clients’ homes. HCA safety promotion may also lead to clients’ safety, since the workplace environment coincides with clients’ life space. Falls prevention is a major priority for home care agencies, given that falls immensely affect older adults’ subsequent health trajectories.^{19,20} Falls prevention initiatives in home care could help align interests of employers, clients, and HCAs. In northern climates, falls prevention should extend to snow and ice removal programs for low-income frail elderly residents. Promoting occupational safety among HCAs offers an approach to enhancing health protection and health promotion in people who engage in precarious work (eg, low wage, unpredictable work hours), especially among those who engage in care work.^{21–23} It further offers the opportunity to develop and maintain organizational commitment to a “culture of health”²⁴ that values the well-being of care workers and their clients.

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