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"Worried About Them When We Left": A Mixed-Methods Essay

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Qualitative Research Graduate Certificate

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Abstract
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Keywords
Home Fire Safety, Older Adults, Visual Inquiry

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The purpose of this visual inquiry using ethnographic photographic research was to examine fire safety in homes of 42 urban older adults. Photographs were taken to document home fire safety (HFS) practices and grouped according to Federal Emergency Management Agency (FEMA) Home Safety Checklist categories. Participants had a mean age of 74 years, and were mostly African-American (n=21, 57%), and female (n=32, 78%). Major findings from the photographs demonstrated unsafe electrical, cooking, and heating practices. Other HFS hazards related to installation and maintenance of carbon monoxide (CO) and smoke alarms, smoking safety, and identification and practice of home fire escape plans. The findings will provide future direction for community education and fire prevention advocacy for older adults. Keywords: Home Fire Safety, Older Adults, Visual Inquiry.

Seniors in the United States (US) account for approximately 13% of the population, an estimated 40.3 million people; of which nearly 1/3 of non-institutionalized older adults live alone (Leahy et al., 2012; US Department of Commerce, 2011). By 2030, it is expected that seniors will make up roughly 19% of the US population (Leahy et al., 2012; US Department of Commerce, 2011). As many as 85% of older adults, age 65 and older, report having at least one chronic illness (Frosch, Rincon, Ochoa, & Mangione, 2010). Despite this growing demographic, coupled with their healthcare related needs, few studies have been conducted examining fire safety and burn prevention practices among older adults living in the US (e.g., Shields et al., 2013). The majority of fire safety and burn prevention studies have focused on the pediatric population, primarily school-aged children. The few studies that have examined older adults (e.g., Broerse, Zweekhorst, van Rensen, & de Haan, 2009; Taira et al., 2011) have either conducted retrospective studies or focused largely on burn survivors. In this study, we conducted a prospective, ethnographic study examining fire safety practices among older adults.

For many years sociologists and anthropologists have been using visual techniques such as photography to examine and understand the social and cultural world around us. Photo-inquiry is a technique in which photographs are systematically presented to participants by the researcher to provide an analysis of a specific area of study. The images in this case documented older adults' home fire safety (HFS) behaviors. The US Fire Administration (USFA) has specific criteria to determine if a home is safe for older adults (US Fire Administration [USFA], ND).

Sometimes photographic documentation is elicited from the participant; however, in this ethnographic exemplar we were trying to tell the story in a narrative that introduced a problematic area of safety in older adults living in the community. National and local initiatives are exploring better ways to enable older adults to safely "age in place" avoiding potentially

irreversible pain and suffering. Most of those injuries are falls in individuals 65 and older causing further limitations and costly procedures later in life (Frosch, Rincon, Ochoa, & Mangione, 2010). Risk and severity of fire and scald injury increase with age (Peck, 2011). Although the risks for injury and death are well documented (Peck, 2011), little has been done to evaluate the presence of counter measures in the homes of older adults. The goal of this study was to describe, via photographic inquiry, the home fire safety knowledge and behaviors of older urban dwellers.

Specific Aims

The primary aim of this project was to describe, using photographs, the HFS hazards found in the homes of urban older adults (over 50 years of age) during a HFS check. Another aim was to take the photographs and analyze them using qualitative research techniques to identify common themes and gain a better understanding of the HFS environment in a group of urban seniors. The final aim was to integrate findings from the HFS Checklist into the thematic photographic data.

Photographic Inquiry as a Research Method

Collier (1996, 1967) describes photography as a tool or instrument that facilitates "holistic and accurate" observation allowing for meaningful research. He further believes photography is a visual record of selective information that allows for comparison and augments field observations. Using photographs increases the possibilities for critical analysis and provides a "control" for visual observations. Photographs are excellent for qualifying contextual relationships that are usually missed in categorized written notes (Collier, 1996, 1967). Through photography, it is possible to learn to see through native eyes; every culture and social group creates their own perceptual world (Collier, 1996, 1967).

Photographs may be used as a *cultural inventory*. John Roberts (1951) states that the "look" of a home (e.g., items, furniture, and placement) reflects who people are and the way they cope with the trials of life. Roberts continues, "Nature and Arrangement" of possessions speak to the owners' values of personal existence.

Benefits. The benefits of using photo-inquiry in examining phenomena include the ability to make a *comparison*, in this study comparing safe and unsafe HFS practices. Secondly, photo-inquiry leads to a *discussion* among participants, community members, and society as a whole. For this HFS photographic research project there were discussions between team members regarding the nature of the HFS category and whether the photograph depicted safe or unsafe situations. Another benefit of photographic ethnography is that *differing viewpoints* are voiced. HFS team members and senior participants would discuss photographic categorization. Seniors might believe in some instances that a cluttered picture equated to being unsafe when in reality the picture would be safe. Team members and participants viewed the photographs from different viewpoints.

Photo-inquiry may be used as a participatory health promotion intervention. Freire (2000, 1970) describes the goals of photo-inquiry in action research are to: engage people in active listening and dialogue; create a safe environment for introspection and critical reflection; and to move people to action. Wang and Burris (1994) moved Freire's model forward and suggested photo-inquiry informs society to help facilitate community changes.

Lockett, Willis, and Edwards (2005), the single photo-inquiry study with seniors, implemented photo-inquiry methods to examine environmental factors influencing walking choices of elderly people. Thirteen seniors in Ottawa, Canada, took photographs of barriers to

and facilitators of walking in their neighborhoods. The photographs were used during three focus group sessions to stimulate discussion. There were significant environmental hazards to walking related to traffic and falling and the presence of benches and washrooms would facilitate walking.

Recent photographic inquiry has not been ethnographic in nature; researchers are focusing on hermeneutic photography as a therapeutic instrument. Sitvast and Abma (2012) explored the effects of photography on management of mental illness. Drew, Duncan, and Sawyer (2012) used hermeneutic photographic inquiry to investigate health promotion behaviors in young people. This study was constructed from the ethnographic perspective noted in Collier.

Methods

In the larger Federal Emergency Management Agency (FEMA) study, older adults (over 50 years of age) who were taught about HFS in a classroom setting (e.g., elder care setting) were compared with those taught in their home (nutrition program such as Meals-on-Wheels). Participants completed pre- and post-tests after watching a six minute HFS digital versatile disc (DVD). A minimum of two weeks after the initial intervention retention of HFS information was tested via telephone interview. HFS practices were determined through a HFS check using a USFA Home Safety Checklist (USFA, ND).

Design

Sample. This was a subsample (n = 42) from the larger HFS study of older adults who participated in HFS checks and photo-inquiry (21 classroom and 21 homebound; See Table 1). The seniors were 74.69 years of age (SD = 8.99) with a range of 57-95; African–American (57%), female (78%), and had 1.56 (SD = 1.13) chronic illnesses with a range of 0 to 4. The top three chronic illnesses were arthritis, diabetes, and cancer. Seniors had an annual income of $15,535 (SD = $6,544), and 83% performed their activities of daily living (ADLs) independently. The top three ADLs they were unable to perform independently were ability to get to and from appointments, housework, and meal preparation. One in three of the older adults were unable to ambulate and used at least one assistive device. More than half had experienced at least one fall within the past six months.

Instrument. This was an ethnographic analysis of a photo-inquiry project. The data included photographs, photographic sorting and tape-recorded stories of the participants; personal journal entries of the Principal Investigator (PI) and research assistant (RA); and discussions with the research team and participants (Collier, 1996/1967). The Home Safety Checklist is a 32-item checklist developed by the USFA (ND). This checklist has six sub-categories: smoke alarms, cooking safety, electrical and appliance safety, candle safety, CO alarms, smoking safety, heating safety, and home escape plan. There was no reported evidence of reliability or validity testing for the scale. Findings from the Home Safety Checklist were interwoven into the photographic analysis.

Procedure

After the study was approved by the University of Louisville Institutional Research Board, participants were provided with a verbal overview of the study and given a written preamble outlining the study purpose and procedures. Once verbal informed consent was

obtained from participants, they were asked to complete a pre-test, view a HFS DVD, and complete a post-test.

Table 1. Demographic and Personal Characteristics of the Sample of Older Adults (N = 42)

Characteristic	n	%
Race (n=37)		
Black	21	57%
White	16	43%
Sex (n=41)		
Female	32	78%
Male	9	22%
Able to perform own Activites of Daily Living (ADLs) (n=41)		
Yes	34	83%
No	7	17%
Unable to perform specific ADL's		
Get to and from appointments (n=42)	14	33%
Housework (n=40)	11	28%
Prepare meals (n=42)	10	24%
Grooming (n=42)	4	10%
Prepare and take medicines (n=42)	4	10%
Toileting self (n=41)	2	5%
Feeding self (n=41)	0	0%
Chronic Illnesses		
Arthritis (n=41)	26	63%
Diabetes (n=40)	15	38%
Cancer (n=42)	11	26%
Congestive heart failure (n=42)	9	21%
Chronic Obstructive Pulmonary Disease (n=39)	3	8%
Chronic Kidney Disease (n=41)	3	7%
Able to Ambulate (n=37)		
Yes	26	70%
No	11	30%
Number of Assistive Devices Used (n=42)		
Two	6	14%
One	2	5%
Three	2	5%
Four	2	5%
Types of Assistive Devices Used (n=42)		
Cane	8	19%
Walker	3	7%
History of Falls (n=40)		
No	22	55%
Yes	18	45%
Had Fall Within Last 6 Months (n=18)		
Yes	10	56%
No	8	44%
Able to Set Hot Water Heater Temperature (n=39)		
No	26	67%
Yes	13	33%
Know Temperature of Hot Water Heater (n=42)		
Unknown	36	86%
120 Degrees	2	5%
Hot	2	5%
Warm	1	2%
Medium	1	2%

Presenting our intervention in the home of an older adult provided data for our research, but was also a social welfare visit. Usually guided by GPS, a two person team (usually a co-investigator and research assistant) went to the participant's home with a computer, computer speakers, written materials, writing utensils, and gifts in tow. When the door opened we politely introduced ourselves and requested permission to enter the senior's home. A short explanation of the process was provided by the co-investigator (Co-I) and the RA. We administered to the participant the pre-test, showed the DVD, and followed up with a post-test. Sometimes we were required to assist the participant by reading each question and answers, or we simply waited patiently while they finished. The older adult appeared to enjoy the visit and often asked questions or reminisced on past fire experiences involving themselves, family, or friends.

With HFS checklist in hand, we moved on to the HFS inspection. With permission from the participant, we documented using photographs both safe and unsafe HFS practices. We tested smoke alarms, examined electrical cords, inspected the kitchen area, and assessed the water heater temperature. We asked the home owner about candle use and smoking habits. We asked questions about their home fire escape plan and if they practiced it. We tested their knowledge about what to do in the event of a fire and provided information when it was lacking or to correct misconceptions about fire safety. After discussing this vital information, we concluded our visit. We gave the older adult a participation gift, and thanked him or her for allowing us into their home. Data were collected using the HFS checklist and from photographs taken in the home, as well as CO-I and RA field notes and log entries.

Model for Analysis

Collier's (1996, 1967) four stage model for analysis was used (See Table 2). Data were observed as a whole; an inventory or log of the evidence was developed; a structured analysis occurred; and a search for overtones and significance followed. Photographs were taken and classified according to checklist categories. Researchers took field notes and completed log entries to supply context for the photographs. Photographs were then presented to all research team members for classification as either a safe or unsafe representation of the home fire safety environment.

Criteria for Rigor

The criteria for rigor in qualitative research included four factors: truth value, applicability, consistency, and neutrality (Lincoln & Guba, 1985; Sandelowski, 1986). *Truth value* is described as the confidence the researcher has in the findings of a specific research project for the participants and for the context in which the project was carried out (Lincoln & Guba). The HFS research team was composed of members with diverse expertise: the PI, an experienced researcher in burn injury prevention; Co-Is with experience working with adults with chronic illnesses and gerontology; and fire inspectors. Checklist findings and photograph sorting were reviewed and discussed over the course of the project by team members, fire inspectors, and participants. Photographs were taken even after team members said: *Do we have to take more pictures? There isn't anything new.* These statements confirmed photographic saturation.

Applicability. Applicability was achieved when the readers or the audience found the results meaningful and applicable to their own experience (Sandelowski, 1986). The use of dense or thick descriptions or photographs in the final account promoted the applicability of the findings to other settings or similar patient populations. Photographs were used in oral and poster presentations to the local and national community to support findings.

Consistency. The third factor in rigor for qualitative research, consistency, refers to the use of an audit trail and dense description or photographs of the methodological decisions (Lincoln & Guba, 1985; Sandelowski, 1986). Early data analysis and ongoing peer debriefing promoted dependability of findings. Photographs were reviewed and discussed by team members throughout the recruitment and analysis phases of the study. The PI and HFS team presented the findings to senior researchers within the school of nursing and to participating groups of seniors within the community to validate the thematic analysis.

Neutrality. Neutrality concerns the control of researcher bias, interests, or perspectives (Lincoln & Guba, 1985; Sandelowski, 1986).To achieve this, the researcher and participants interacted in a linear/collaborative fashion which enhanced the dialogue between participants and team members. Team members promoted an open dialogue between themselves and participants. They asked permission to take the photographs and used the checklist as a way to engage in health promotion education.

Results

Results from the HFS checklist and an examination of the number and content of the photographs by HFS category were woven into the major thematic findings of *HFS Hazards* and *Preparedness Measures*. Described first are the HFS checklist items with more than 50% unsafe behaviors (see Table 3). See Table 4 for a summary of the percentage of safe and unsafe photographs by HFS category. Thematic findings of *HFS Hazards and Preparedness Measures* conclude Stage 4 analysis (see Table 2).

Table 2. Colliers' Model for Data Analysis

Stage	Analysis Actions	HFS Study
1	Data is observed as a whole	Research team examined color copies of the photographs at team meetings. Discussion among team members was encouraged, supported, and ongoing throughout the study.
2	An inventory or log the evidence is developed	Photographs were cataloged to a SharePoint library and categorized by HFS checklist category. Then photographs were described as safe or unsafe by one RA.
3	A structured analysis occurs	Examples of photographs by category were discussed with the entire team at three meetings. Fire inspectors independently rated selected photographs as safe or unsafe and by categories at time 1 and time 2. Community participants categorized photographs as most safe or unsafe by HFS Checklist category. Team members at the conclusion of the HFS presentation, after the post-tests were completed, asked participants to rate the photographs as most un-safe or safe in each category.
4	A search for overtones and significance	Findings from HFS checklist, and an examination of the number and content of the photographs by HFS category were woven into the major thematic findings of *HFS hazards* and *Preparedness measures*.

Table adapted from: Collier, 1996, 1967, pp. 178-179

Analysis of HFS Checklist Data

Six of the 32 HFS checklist items were rated as having greater than 50% unsafe behaviors. These HFS checklist items, in order of most unsafe ratings per item, are as follows:

- CO alarms located on every level of the home
- CO alarms less than seven years old
- practice your fire escape plan
- meeting place should be near the front of your home
- know where to meet after the escape
- family members who smoke only buy fire-safe cigarettes and smoke outside (See Table 3).

Table 3. Analysis of HFS Checklist Data [a]

HFS Checklist Items	Number of Unsafe Practices	%
Carbon monoxide (CO) alarms are located on each level of the home (*n* = 39)	35	90%
CO alarms < 7 years old (*n* = 39)	35	90%
Practice you fire escape plan (*n* = 38)	26	68%
Meeting place should be near the front of your home (*n* = 38)	23	61%
Know where to meet after the escape (*n* = 38)	21	55%
Family members who smoke only buy fire-safe cigarettes and smoke outside (*n* = 13)	8	62%

[a] Sample size varies from 13-39

Table 4. Safe and Unsafe Photographs by HFS Category

	Safe		Unsafe	
HFS Checklist Category (n=192)	**n**	**%**	**n**	**%**
Electrical & Appliance Safety (n=63)	35	56%	28	44%
Heating Safety (n=35)	14	40%	21	60%
Cooking Safety (n=37)	18	49%	19	51%
Home Escape Plan (n=24)	14	58%	10	42%
Smoke Alarms (n=16)	11	69%	5	31%
Candle Safety (n=9)	5	56%	4	44%
Smoking Safety (n=4)	1	25%	3	75%
Carbon Monoxide Alarms (n=4)	4	100%	0	0%

Analysis of Photographs by HFS Category

Photographs were independently rated by two local fire inspectors at time 1 (after 75% of the photographs had been obtained) and again two weeks later. The resulting inter-rater reliability between the two fire inspectors was .92, and the intra-rater reliability from time 1 to time 2 was .91. When photographs were taken to community participants and HFS team members the inter-rater reliability rating was .76. Statistical analysis of inter-rater reliability utilized Krippendorff's Alpha Coefficient.

The electrical and appliance, heating, and cooking safety categories had the highest number of unsafe photographs with 28, 21, and 19 photographs per category, respectively (See Table 4). Of the 135 photographs taken from the three most unsafe categories, 50% (*n* = 68) were categorized as unsafe. The smoking safety category had 75% (*n* = 3) of its photographs

categorized as unsafe, and the CO alarms category had 100% (n = 4) of its photographs categorized as safe. Overall, 90 of the total 192 photographs (47%) were considered unsafe.

Thematic Results

Two major thematic findings were described as *HFS Hazards* found in the home and *Preparedness Measures* practiced by the older adults. Electrical and appliance, cooking, and heating were the three main *HFS Hazards* represented by the photographs. Of the 63 photographs taken in the *electrical and appliance* category, 28 photographs were rated as unsafe. Examples of unsafe electrical occurrences involved corroded electrical breaker panel, flammable items too close to electrical outlets, and inappropriate placement of electrical cords (See Figure 1). Community participants reported, after viewing the photos, that they noticed too much clutter and too many cords in many of the photos. One participant said, "they don't have [any] concept of why they would [put] all those wires and have all that things on the floor, on the carpet. So that's bad business. Why would they want to put wires [there]?"

In the heating safety category, 21 of 35 photographs, or more than half, were rated as *unsafe*. Hot water heaters were set on high or above 120 degrees F (See Figure 2). Ovens and gas stove surface burners were used to heat homes. Space heaters were perched unsafely or too close to flammable items. Participants were able to identify many of these photos as unsafe and were heard stating that these photos looked like their home, implying that they also had these same fire hazards in their own homes.

In the third category, cooking HFS hazards, 19 of 37 photographs, again more than half of the photographs taken, documented unsafe cooking situations within the homes. Pot handles were turned out or on the front stove burners. Cardboard pizza boxes were placed on gas stove burners. While looking at pictures of kitchens, one participant notes, "…this [is] too close to the stove, and I mean, this is just too junky. I mean, everything. But this is right there. All the electrical appliance are right in there together, and that could make a [fire].

Preparedness Measures, the second major theme, had photographs which depicted incorrect placement or incorrect number of smoke alarms within homes. There was a lack of CO alarms within most of the homes and on each level of the home. The total number of CO alarms photographed were four. Approximately 90% of the homes visited either did not have a CO alarm or did not have a CO alarm on every level of their home as recommended by the USFA.

Participants, whether they lived in their own home or within an apartment complex, did not practice their fire escape plan (68%). Further, 61% were not aware that the meeting place should be near the front of their home; 55% reported not knowing where to meet following exiting their home in the event of a fire.

During the follow-up phone calls, senior participants reported some of the HFS changes they had made as a result of study participation. These behavior changes included calling the local metro help line (311) for needed smoke alarms to be installed, sharing the HFS DVD with others in their family, and lowering hot water heater temperature.

Figure 1. Inappropriate Placement of Electrical Cords

Figure 2. Hot Water Heater Temperature Set above Recommended Settings

Figure 3. Smoking in Bed

Figure 4. Clutter Can Be Both a Fire Hazard and a Hindrance to Escape

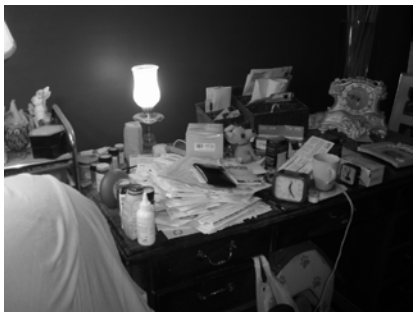

Figure 5. A Hazardous Cooking Environment (Note the grease on the wall and close proximity of flammable objects.)

Discussion

Using photographic inquiry, two themes emerged from the data: *HFS Hazards* found in the home and *Preparedness Measures* practiced by the older adult participants.

The most frequently documented (via photographs) HFS hazards found in seniors homes fell into three categories: electrical/appliance hazards, heating hazards, and cooking-related hazards. Based on the photographs, the most common electrical issues involved corroded electrical breaker panels, flammable items too close to electrical outlets, and electrical cords running under carpets. A leading cause of home fires each year is due to electrical failures (Brenner, 2013). Additionally, electrical fires have been shown to increase in frequency corresponding with the age of the home due to aging electrical systems (Brenner, 2013). With the majority of our participants living in older homes, this places them at greater risk for electrical fires.

Among the heating hazards found in the homes, hot water heaters were consistently found to be set above 120 degrees Fahrenheit. Leahy and colleagues (2007) examined the records of 281 hospitalized burn patients and found 23% were 60 years and older. They concluded that exposure to scald injuries increased the risk for health complications and subsequent death among this population (Leahy et al., 2007). The research related to scalds suggests that older adults are at particular risk for hot water burns (Leahy et al., 2007). This is particularly worrisome among our sample as a large number (67%) of our participants indicated they were not able to set the temperature on their hot water heater, and 86% indicated they did not know the recommended setting of 120°F.

In the third category, cooking hazards, which consisted of pot handles being turned toward the front of the stove and flammable items (e.g., cardboard pizza boxes, paper products) placed on or near the stove were frequently found during the HFS checks. Many of the seniors were unaware that turning pot handles away from the front of the stove or cooking from the

back burners was a safer practice. This finding is vitally important as cooking has been found to be a leading cause of house fires (Shields et al., 2013). In addition, the older adults used their stoves as a heat source during the winter months. They did not perceive this as unsafe, but rather a necessary practice due to the cost of electricity to heat their homes. With the median income for older adult men at $25,000 per year, compared with $15,000 for women of the same age, and with 14 million older adults living below the poverty level (Leahy et al., 2012), it is not surprising that these older adults used alternate means for staying warm. Age as well as lower socioeconomic status have been identified as major risk factors for burn-related injuries (Cubbin, LeClere, & Smith, 2001; Edelman, 2007). Taira et al. (2011) found that lower SES outweighed self-reported use of prevention strategies as the single most important predictor for incurring a burn injury.

The second major theme to emerge from the data was that preparedness measures were largely absent from the seniors homes. Though a number of participants had working smoke alarms, a large percentage did not have CO alarms (90%). According to Shields and associates (2013), older adults are at greater risk for developing CO poisoning, particularly as many have existing medical problems associated with respiratory and circulatory conditions. Further, older adults were found to more likely attribute the symptoms associated with CO poisoning to their current medical problems, often times failing to recognize the untoward side effects of CO poisoning, which left untreated resulted in increased hospitalizations and/or deaths (Ibqal et al., 2010, 2012; Shields, 2013). These findings suggest education is needed focusing on improving knowledge about CO poisoning with an emphasis on CO safety. When asked about having a fire escape plan, most of the participants indicated they had a plan; however, when asked to describe their plan, the majority stated their plan was to exit their home safely. Few of the participants verbalized practicing their fire escape plan within the last year or ever. This finding is consistent with Taira et al. (2011) who also found that having an escape plan was not commonly or consistently practiced among their participants. Ballesteros and Kresnow (2007) conducted a national random telephone survey and found approximately 52% of households reported having a fire escape plan, but only 16% had practiced it within the last six months.

As Taira and colleagues (2011) noted in their study, understanding and improving fire prevention practices of older adults, for example, must move beyond assessing smoke alarm usage and focus more patently on complex behaviors directed toward preventing injuries due to home fires. The older adults in our study on average reported having two chronic illnesses, and over half had a history of falls. Fire prevention programs aimed at older adults need to address such relevant issues as mobility and health status when planning burn prevention education. Based on our findings, an important area of focus in any fire prevention program for older adults would include fire escape planning.

It is hard to generalize findings when there are only two studies that targeted older adults' HFS. None of the researchers examined knowledge before and after an educational intervention nor was information on systematic room-by-room home checks reported. Clearly, very little is known about HFS changes in knowledge, information retention, or practices for older adults.

Strengths

The strengths of this photographic ethnography were the use of inter-rater reliability by the fire inspectors and senior university researchers; use of a professionally developed checklist; and ongoing discussions and debriefings within the team and with senior study participants. Photographic saturation was achieved and is evidenced by the number of photographs taken. Finally, the use of a diverse group of urban seniors added to the richness of the findings.

Limitations

The limitations included each photographer coming with their own bias. It is not known how many stoves or cords the researchers chose not to photograph. Mitigating bias occurred because the checklist was used to narrow choice of photographs. In addition, photography as a medium has an inherent bias in that the photographer determines the photographic composition.

Time of the year was another limitation. The home visits occurred primarily during the fall and winter months. Consequently, more alternative sources to home heating were observed, namely ovens and range burners. There was an absence of outdoor seasonal hazards (e.g., barbecue grills, fire pits). Another consideration was the participants, unlike younger people, may have been inclined to give more socially desirable responses. Our photographs included HFS behaviors and activities, but not people. Nonverbal cues provide connectedness when we look at other human beings occurs, but was missing from our study as we only photographed objects.

Implications

The use of photographic inquiry served as a way of validating checklist findings. Adding visual data to quantitative results created depth in the analysis and highlighted the reality of living conditions. Photographs were taken even after team members said: "Do we have to take more pictures? There isn't anything new." These statements aid confirmation of photographic saturation. Photographs add intrinsic information and can be used by future researchers to mitigate literacy issues, address social taboos, and create concrete, real world connections among abstract ideas.

Future research directions include comparing rural versus urban HFS differences of older adults. Other populations important to study include immigrants and those of different socio-economic levels who may have unique HFS hazards and preparedness needs. Photographs of safe and unsafe HFS hazards could be used in the development of an educational instrument for older adults.

In our community there is a need for further HFS with an emphasis on installing CO alarms and identifying and practicing home escape plans. Photographs were well received by this group of urban older adults and promises to be an innovative educational tool for future HFS promotion and research. A more comprehensive program aimed at increasing older adults' HFS knowledge and practices is needed.

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