



HRV HOME MAINTENANCE & AGING IN PLACE SURVEY

Summary of Preliminary Results from:
Contractors, Homeowners and Informal
Caregivers Caring for Persons with Dementia

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HRV Home Maintenance and Aging in Place Survey: Preliminary Report of Results

ABSTRACT

OBJECTIVE: Home maintenance (HM) and HM issues (HMI) as they relate to stress, burden and Aging in Place (AiP) for informal caregivers (ICG) of persons with dementia (PwD) is a neglected and understudied topic. While a plethora of studies emphasize the importance of home environment safety as an important aspect of dementia care (See Gitlin et al., 1996, 2010, 2011, Johnston et al., 2011, Mathieson et al. 2001, Butler et.al, 2020), few if any, include home maintenance as a foundational, preventive and/or crucial component of the home environment. The purpose of this study was to query ICGs caring for PwDs, AiP contractors and homeowners regarding home maintenance issues related to AiP place including the costs (financial and otherwise) of deferred maintenance and the disruptions to daily life caused by HMI.

METHODS: A convenience sample (N=157) of ICGs (N=15), contractors (N=43) and homeowners (N=99) completed surveys customized for each sub-sample. For example, ICGs rated (0-5) their HMI related disruptions, stress and burden as well as the likelihood (0-5) of doing more HM if provided with specific information personalized to their homes. Contractors responded to questions about the type and percentage of home modifications that required repairs prior to starting jobs, and homeowners about current HM practices and issues and likelihood of doing more HM. All groups were asked to provide memorable examples of HM issues.

RESULTS: *Informal Caregivers:* ICGs reported relatively high stress (mean = 3.9 + 1.4) and burden (3.6 + 1.5) in relation to HMI (median and mode stress = 5, burden = 4 and 5). ICG were very or highly likely to do HM if provided information about who to call and financing options or information customized to their home's condition and needs. The mean, median and mode on the likelihood measures were all ≥ 4 . Highly stressed ICGs were most likely to do more HM ($p < .05$). *Contractors:* Close to one-third (31%) of contractors reported that over half of their original jobs included some additional repair and/or maintenance tasks and 23% of contractors reported $\geq 50\%$ of repairs were deferred maintenance repairs. The most frequently cited repairs were related to plumbing and related/undetected damage due to leaks necessitating substantial additional work. *Homeowners:* Forty-five (48%) of homeowners reported not doing any regular HM tasks. Homeowners were aware of situations where the failure to do so caused damage to their homes (46%) or a more expensive repair than if it had been addressed as part of regular maintenance (35%). Homeowners were very or highly likely (61%) to do HM if provided with information about who to call and financing options or provided with information customized to their home's condition and needs (67%).

CONCLUSION: These results should be interpreted with caution. For expediency, our samples were drawn from our networks and are true samples of convenience. Nonetheless, the results from the three subgroups are compelling and complement as well as validate each other. The finding that HMIs add stress and burden to the lives of ICGs caring for PwDs suggest that the topic of home maintenance as a critical precursor to Aging in Place warrants further exploration and can no longer be ignored. Providing ICGs with information may empower them to make changes that in turn, will mitigate objective burden and stressors from their lives and enhance self-efficacy/mastery.

HRV Home Maintenance and Aging in Place Survey: Preliminary Report of Results

BACKGROUND

Home maintenance (HM) and HM issues (HMI) as they relate to stress, burden and Aging in Place (AiP) for informal caregivers (ICG) of persons with dementia (PwD) is a neglected and understudied topic. While a plethora of studies emphasize the importance of home environment safety for PwD, few if any, include home maintenance as a foundational, preventive and/or crucial aspect of the home environment.

While providing ICGs with information about HMIs (of which they had previously been unaware) could conceivably be accompanied by concomitant stress, the information is just as likely to empower caregivers through the enhancement of autonomy, control, and mastery of the situation if potential solutions and choices are presented. HMIs are objective stressors which add to the objective burden load. The well-known stress process model and social cognitive theory (Bandura, 1977, 1989, 20; Folkman, 1984; Folkman, Lazarus, Gruen, DeLongis, 1986; Pearlin & Schooler, 1978) have long supported that providing ICGs with tools to manage objective stressors in turn, mitigates subjective stress.

There is an extensive body of literature that emphasizes the centrality of caregiver mastery and self-efficacy (Au, Yip, Lai, Ngai, Cheng, Losada, et al., 2019; Grano, Lucidi, Violani, 2017; Mausback, Patterson, von Kanel, Mills, Ancoli-Israel, Dimsdale JE,; Sato, Nakaaki, Sato, Shikimoto, Furukawa, et al, 2021; Semiatin, O'Connor, 2012;). Our prior research supports the contention that the provision of information can be empowering to ICGs and enhance mastery and reduce stress (Griffiths, 2016, 2018, Hepburn et. al., 2021). In a study conducted over a decade ago with dementia dyads, efficacy for home safety increased and caregiver strain decreased after an intervention that provided the dyads with a home safety toolkit (Horvath et al., 2013) Information can be powerful and mastery is emerging as a powerful mediator of ICG stress and other adverse outcomes (Higgins et. al., 2024 Under Review).

METHODS

The HRV team developed a survey designed to evaluate the issue of home maintenance from the perspectives of key stakeholders: contractors who routinely conduct home modifications for aging in place, homeowners residing in their own homes who are currently aging in place, and our target population-that of the informal caregivers caring for a person with dementia.

Surveys

Each sub-group had a core set of survey questions as well as some specific to the individual group. For example, contractors were asked about home maintenance in relation to contracted jobs. The follow-up questions queried amounts and percentages. Homeowners were asked how much HM they did, who did it, if they ever had issues due to failure to conduct HM and the likelihood of doing more HM if provided with a) information customized to their home about what needs to be done and/or b) about who to call and financing options. Informal caregivers were asked to rate how much, if any, burden or stress home maintenance issues added to their lives and if HMIs ever disrupted daily routines and if so, if they were forced to relocate as a result. ICGs were also asked the 'likelihood of doing more home maintenance questions' described above. Surveys were created and completed in the JotForm survey builder platform. Individual surveys are available upon request.

Sample

HRV Team networks were emailed, and respondents given four weeks to complete the surveys resulting in a convenience sample of ICGs (N=15), contractors (N=43) and homeowners (N=99). The survey was mailed to advisors as well, but only one responded so that sub-group was eliminated from the analysis. We did not collect PHI or demographic data from any participants and did not require an IRB.

ANALYTIC STRATEGY

Data were exported to Excel, cleaned, manipulated, and imported into SPSS version 29 for concatenation, aggregation and analysis. In deference to our sample size, the nature of the data and the nature of our research questions (RQs), we restricted statistical inference testing to the caregiver survey only. We were interested in exploring the relationship between Home Maintenance Issues and ICG stress and burden.

RQ1. Do ICGs caring for PwDs perceive HM as stressful?

RQ2. Do ICGs caring for PwDs perceive HM as an additional burden to their caregiving load?

RQ3. How likely would ICGs caring for PwDs be to do more home maintenance if provided with information personalized to their home about what needs to be done and/or who to call and financial/budget information.

RQ4. Is there an association between HM stress level and likelihood of doing more HM?

Descriptive statistics (means, SD, mean, median, modes) are used to summarize the data from each survey. Fisher's exact test was used to test the association between stress and likelihood of doing more home maintenance.

RESULTS OVERVIEW

Results in this report are presented by sub-group:

- Informal Caregivers
- Contractors
- Homeowners

Key findings are presented first in tabular format or as an abstract.

This is followed by the individual survey questions in the order they appeared in each survey with frequency tables or graphs to illustrate the obtained results.

As previously mentioned, we did not collect demographic data from any participants beyond a few broad questions. Each section ends with selected qualitative comments. The contractor group was the only one large enough for a quantitative summary of the qualitative content analysis of key themes.

The final section of the Results summarizes the key findings from each sub-group.

SURVEY 1 RESULTS

Burden and Stress with Home Maintenance Issues in a Sample of Informal Caregivers Caring for Persons with Dementia.

Abstract

We surveyed a convenience sample of 15 informal caregivers (ICG) caring for a person with dementia to assess stress and burden with home maintenance issues (HMI) and the relationship between HMI, disruptions to routine, safety and aging in place (AIP). HM Stress and burden were rated on a 5-point Likert scale (none to a great deal) and were highly correlated ($r=.92$). ICGs reported relatively high stress (mean = 3.9 ± 1.4) and burden (3.6 ± 1.5) in relation to HMI (median and mode stress = 5, burden 4 and 5). Seventy-three % had HMIs (furnace or appliance breakdown, plumbing or roof leaks) that disrupted the daily routines of the household with five instances resulting in a temporary ($n=3$) or permanent move from their home ($n=2$).

ICGs used the same scale to rate the likelihood of doing more HM if provided with information (a) customized to their home and issues or (b) on who to call and finance options. There was variability in the likelihood of doing more HM, however the means, modes and medians were four or more indicating a high likelihood to do more HM if armed with information to help them.

Some of the variability in the likelihood of doing maintenance may be explained by the stress and burden around HM issues. In deference to multicollinearity and small sample size we examined the relationship between Stress with HMI and both likelihood of HM measures. The results of the Fisher's exact test indicate a significant association ($p=.027$) between Home Maintenance Stress and the likelihood of doing more HM if provided with option a) customized information about what needs to be done, but not option b) who to call and financing options, indicating stress level did not factor into the likelihood of doing more HM when provided with that particular information.

These results must be interpreted with caution due to the sample size, but they are the first of their kind to examine the stress and burden with home maintenance issues for ICGs caring for a person with dementia. The finding that stressed caregivers are likely to conduct more home maintenance if provided with information customized to their home and about what needs to be done is compelling and supports the evidence base positing the promotion of caregiver mastery.

Qualitative data augment these findings and poignantly illustrate the lived experience of these ICGs as this representative comment illustrates: The most extreme situation was when the power was out for five days, and I had to move my mother and I to a motel as the outage seriously compromised my capacity to provide the care she needed and it was not safe for her to stay in the home."

Results 1: Informal Caregivers Caring for a Person with Dementia

Caregiver Relationships to PwD

Fifteen caregivers completed the survey, all but one indicated caring for a person with dementia. Over half (8) were spouses followed by adult children (7) and one niece. Duration of caring was split between 1-5 years (8) and over 5 years (7). All but two resided with the person and 70% provided care with activities of daily living (ADL). All ICGs reported providing help with Instrumental Activities of daily living (IADLs).

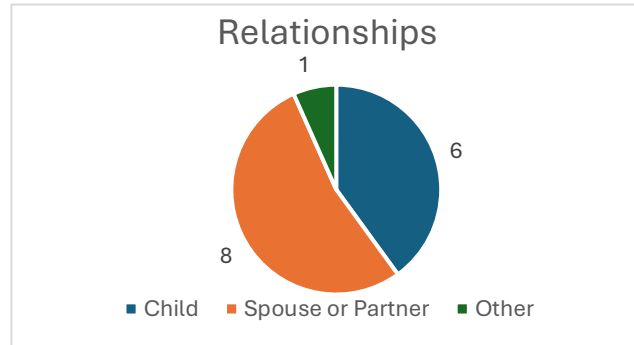


Figure 1 ICG Relationships to PwD

Home Maintenance Issues as Additional Stress and Burden for ICGs

We asked the ICGs to indicate on a 5-point scale (none to high) if keeping up with or managing the various routine and seasonal home maintenance tasks was a burden to them and if these tasks added additional stress to their caregiving duties. ICGs reported relatively high stress (mean = 3.9 ± 1.4) and burden (3.6 ± 1.5) in relation to home maintenance. The median and mode for burden were 4 and 5, respectively, and 5 for stress. The figures below show the stress and burden with home maintenance ratings for the 14 ICGs (one living in congregate facility removed).

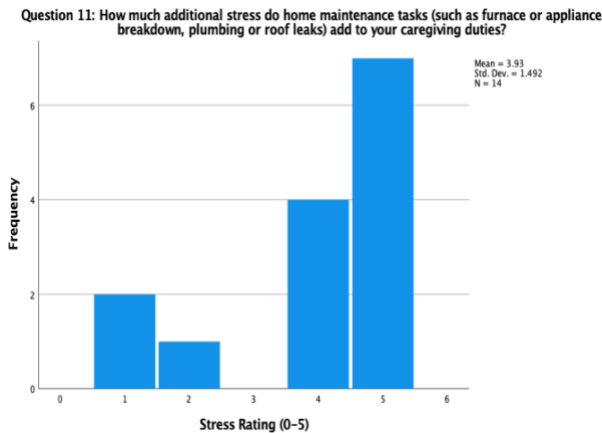


Figure 3 Additional Stress due to HM

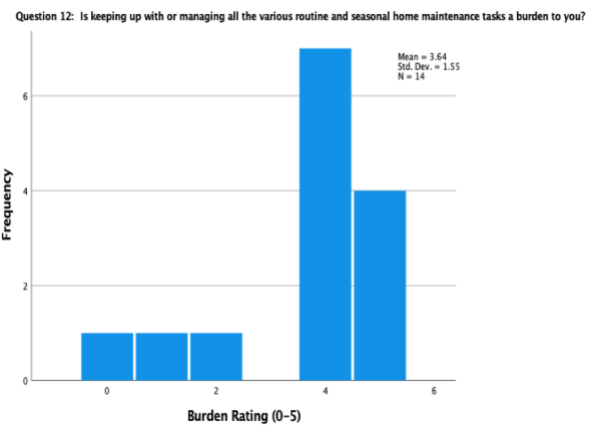


Figure 4 Home Maintenance as a Burden

Likelihood of Doing More Home Maintenance If Provided with Information

ICGs used the same 0-5 rating scale to rate how likely they would be to do home maintenance based on two factors asked as two separate questions:

- 1) if they had information customized to their home's condition about what needs to be done
- 2) if they had information about who to call and financing options

As shown in figures 5 and 6 below, there was considerable variability in the likelihood of doing more home maintenance, however, the mean, mode and median values on the five-point scale were four or more indicating a high likelihood to do more home maintenance if armed with information tailored to their home, who to call and financing options.

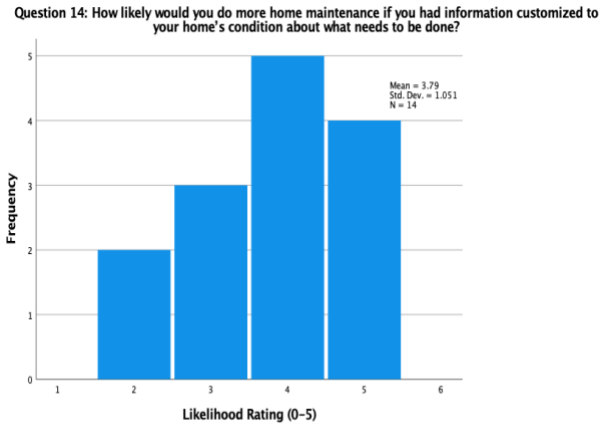


Figure 5. Likelihood of More HM with Custom Information

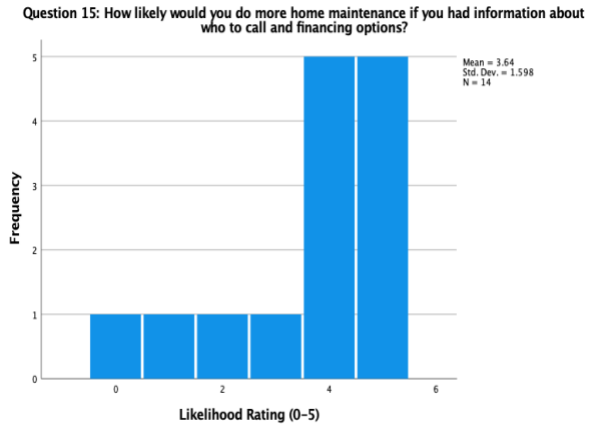


Figure 6 Likelihood of More HM with Info About Who to Call

It's possible that some of the variability in the likelihood of doing maintenance can be explained by the stress and burden around HM issues. Does stress and/or burden mediate or moderate the likelihood of doing more home maintenance? Are ICGs with greater stress more (or less) likely to do more home maintenance when provided with information about their homes or financing options?

The stress and burden measures were cross tabulated with the likelihood measures to visually examine and descriptively illustrate these relationships. The bar charts below display stress with home maintenance cross tabulated with the likelihood of doing more home maintenance if provided with information about their home (figure 7) or who to call and financing options (figure 8).

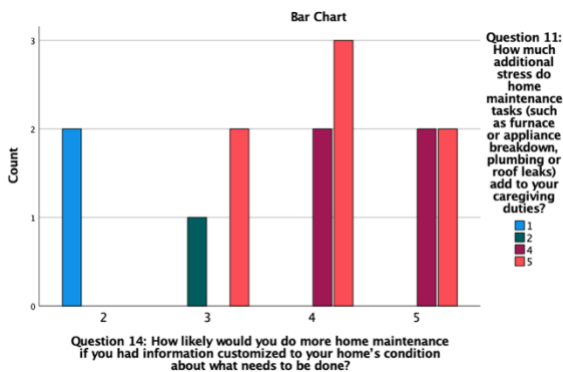


Figure 7. Stress and Likelihood with Custom Info

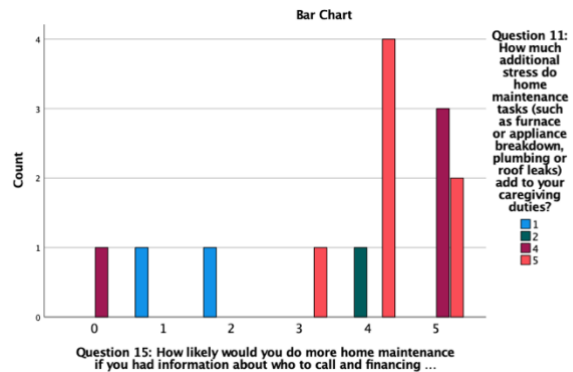


Figure 8. Stress and Likelihood with Who to Call & Budget Info

Both graphs show a positive relationship between stress with home maintenance issues and the likelihood of doing more if provided with information.

The bar charts below display ICGs perceptions of burden with keeping up with and managing home maintenance tasks cross tabulated with the likelihood of doing more home maintenance if provided with information about their home (figure 9) or who to call and financing options (figure 10).

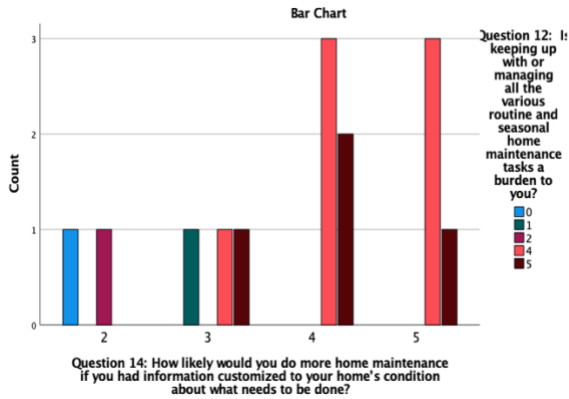


Figure 9 Burden with Likelihood if Customized Information

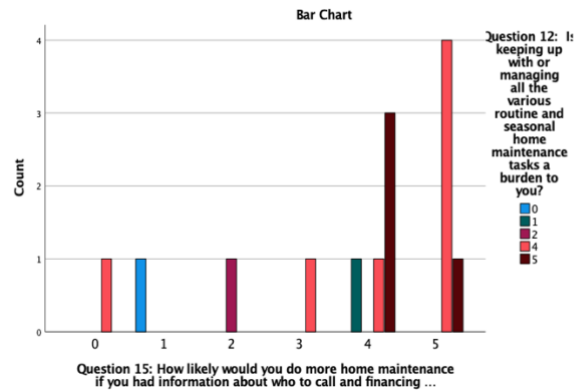


Figure 10. Burden with Likelihood if Who to Call and Budget Info

Like the stress graphs, both burden graphs show a positive relationship between home maintenance burden and the likelihood of doing more HM if provided with information customized to the home or about who to call and financing options.

Home maintenance stress and HM burden were highly correlated ($r=.92$). In deference to this multicollinearity and the small sample size we selected just the Stress measure to test the association with likelihood of doing more HM. The cross-tabulation graphs showed empty categories that would violate the assumptions of the tests, therefore we collapsed both scales from 5 points to three: 0-1 = “None or A little”, 2-3 = “Moderate” and 4-5 = “Lots or high” to avoid the issue of empty cells. We ran Fisher’s exact due to the small sample size and cells with less than 5.

The results of the Fisher’s exact test indicate a significant association ($p=.027$) between Home Maintenance Stress and the likelihood of doing more HM if provided with customized information about what needs to be done. The second option, information on who to call and financing options was not significant ($p=.18$), indicating stress level did not factor into the likelihood of doing more HM under that condition. The cross-tab bar chart for the truncated categories of HM stress and likelihood with customized info appears to the right and depicts the relationship between the highest stress level and the highest likelihood rating. The informal caregivers caring for a person with dementia who rated their home maintenance stress at the highest level were more likely to endorse the highest likelihood level.

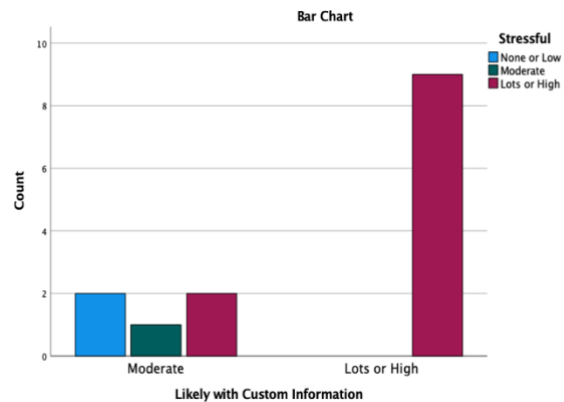


Figure 11 Stress and Likelihood of More HM

Caregiver Qualitative Comments

Eight ICGs relayed stories in response to request to “Please share one or two stories of the most extreme or most memorable deferred maintenance or repair situations that disrupted the daily routines of the household.” Their stories included power outages, appliance failures and sewers backing up into the house. Key points include:

- Deferred HM can be costly
- ICGs are busy and strapped for time to research HM solutions
- Some ICGs feel at the mercy of unscrupulous contractors found through internet searches
- Having something reliable to count on brings peace of mind

Deferred home maintenance can be costly –as these ICGs related.

“ I put off replacing the sewer line and ended up with gross brown water backing up in my house. ***I had to make an immediate and expensive choice*** to have the entire sewer line to the street replaced.”

“With care for my frail 96 year-old mother, I have to do laundry every day, due to incontinence issues. The washing machine has had episodes of parts going bad, causing the machine to leak and flood the basement floor. During the first incident, I was in such panic from running out of the daily laundry I needed before the repair could be done. Immediately afterwards, ***I purchased a whole lot more supplies so that I could go for at least three days*** without the washing machine if need be.”

Many caregivers are so busy providing care they simply lack the time to find reputable contractors leaving them feeling vulnerable. Others are taken advantage of by unscrupulous contractors.

“We also had the water heater go out, again on a weekend, and I had no idea what to do or who to call, and as a dementia family caregiver I never had a lot of time (if any) to do research to find somebody, let alone somebody reliable, affordable, and could do good work. ***You're kind of at the mercy of the first company that comes up in Google search.***”

“Roof leak. I ... signed too quickly. After which I found out it was only a leaking vent. Too late, I was ***locked into a contract*** for a new roof. The roofing ***company wreaked havoc***, damaging siding, gutters, and an arbor that was ***one of the last things my husband was able to build***....it was highly stressful.”

One caregiver expressed the peace of mind that comes with being able to rely on something (in her case a generator) while caregiving in a world of uncertainty.

“The most extreme situation was when the power was out for five days and I had to move my mother and I to a motel as the outage seriously ***compromised my capacity to provide the care***

she needed and it was not safe for her to stay in the home. After several incidents of lengthy power outages we used some of my mother's savings to buy a stand-by generator that will help keep her safe and keep me sane during these power outages. It has surprised me how much peace-of-mind that stand-by generator gives me—something *I feel I can count on to be there in this rollercoaster world of caregiving where I really can't count on much.* “

The findings from the ICG surveys coupled with the qualitative comments provide preliminary evidence that home maintenance issues can be stressful to ICGs and perceived as an additional burden. ICGs in this sample were willing to do more home maintenance if provided with information. Both information customized to their homes and what is needed as well as information about who to call and financing options. HM stress was associated with likelihood of doing more home maintenance in that higher stress was positively related to greater likelihood.

SURVEY 2 RESULTS

Results 2 : Contractors

KEY FINDINGS

- Close to one-third (31%) of contractors reported that over half of their original jobs included some additional basic home repair and/or maintenance tasks.
- 23% of contractors reported that 50% of repairs made on jobs were deferred maintenance repairs
- The most frequently cited repairs were related to plumbing
- Not all repairs were reimbursed (state funded).

Survey Results

Forty-three contractors completed the HRV survey about home maintenance issues. Three-quarters of the sample had been contractors for more than 10 years. All (100%) reported having experience with home modifications or accessibility features for aging in place in addition to having completed special training and or certifications.

Areas of expertise ranged from Certified Aging in Place practitioners to Universal Design and Age Safe America. The figure below shows the number of contractors with certifications, trainings and areas of expertise (not mutually exclusive).

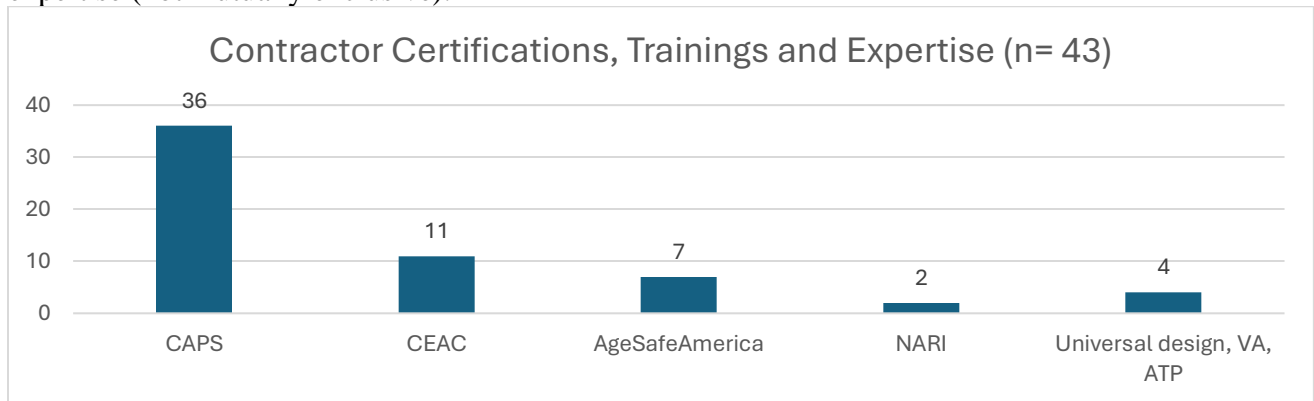


Figure 11. Certifications and Trainings

Home Modifications

All but two of the contractors reported that during the year home modification or accessibility projects constituted a certain percentage of their projects.

Fourteen (33%) of the contractors reported over half of their projects were devoted to home modifications and accessibility.

Figure 2. shows the number of contractors endorsing each percentage category.

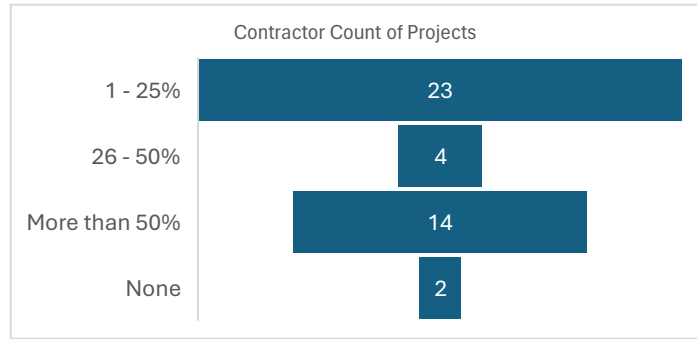


Figure 12. Home Mods and Accessibility Projects

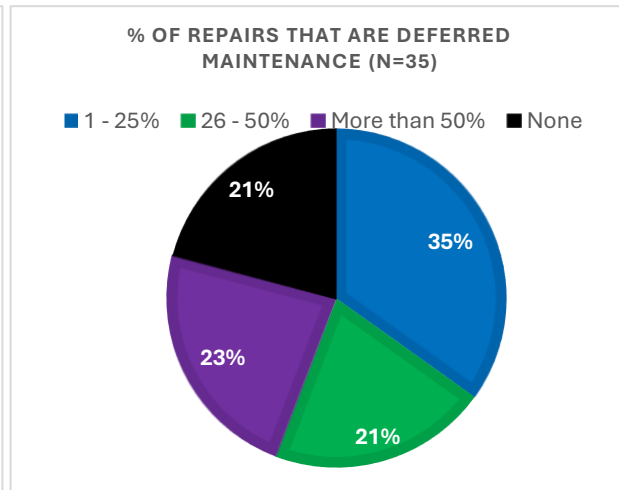
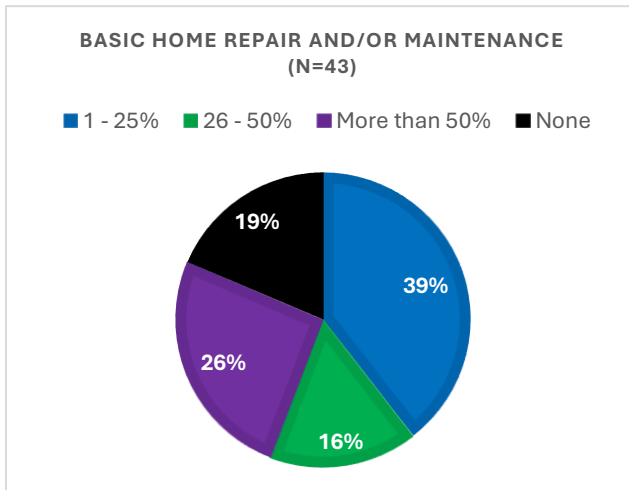
Basic HM Repairs in Addition to Job and Repairs Due to Deferred Maintenance

Thirty-five of the contractors responded “yes” to the question “When doing home modifications or accessibility projects, have you also done home repairs and maintenance in addition to the job for which you were called?” They were then asked to estimate the percentage of jobs for which this was the case using a four-point scale ranging from none to more than 50%.

Over one third (39%) of the contractors endorsed “More than 50%” of their original jobs included some additional basic home repair and/or maintenance tasks (figure 3). Contractors were asked to estimate the percentage of repairs they did that were due to deferred maintenance, 23% of contractors reported that “More than 50%” of repairs made on jobs were actually deferred maintenance repairs (figure 4).

Figure 13. Percent of Jobs Requiring Repairs or HM.

Figure 14. Repairs Due to Deferred Maintenance



Type of Repairs Needed Prior to Beginning Contracted Jobs

The type of projects carried out varied considerably but the overwhelming majority were plumbing projects (40%) followed by roof and exterior projects (27%). Figure 15 illustrates the frequency of each of the 73 projects listed by the contractors and Figure 16 on the next page shows percent.

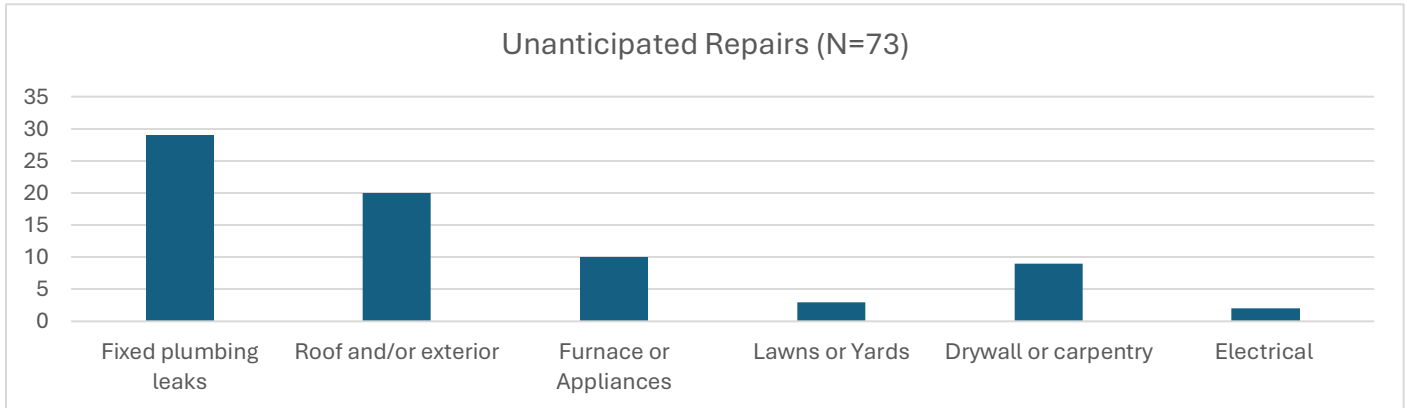


Figure 15. Unanticipated Repairs Made by Contractors

Figure 16. below shows that 40% of the repairs reported necessary by the contractors were fixing plumbing leaks, followed by roof or exterior repairs (27%). Not surprisingly, the majority of contractor stories shared with related to these issues.

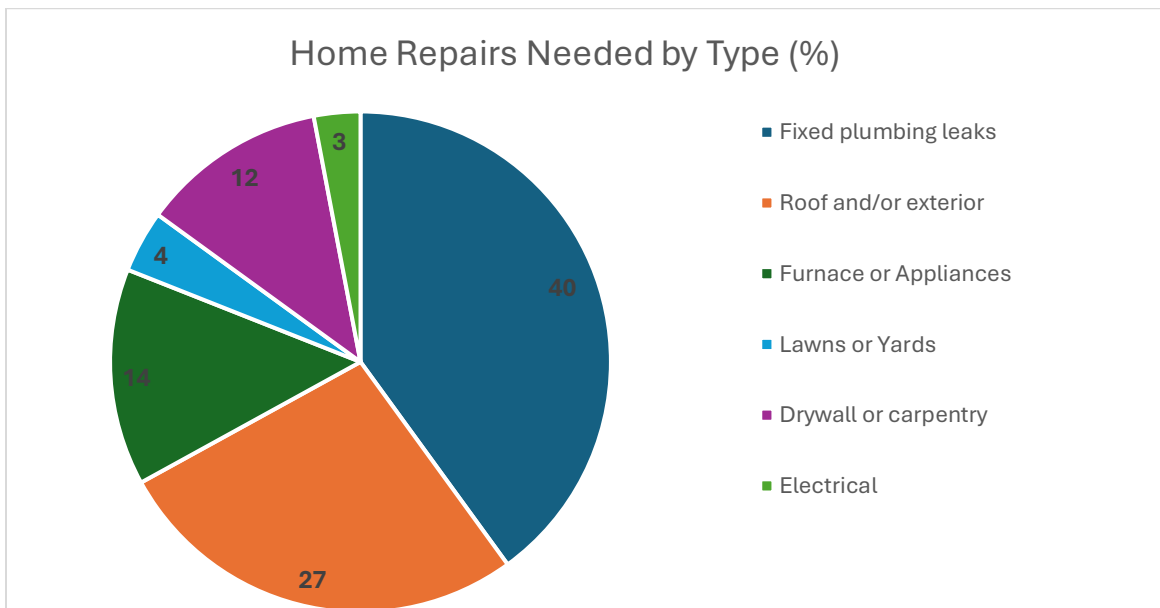


Figure 16. Type of Repairs Made (%)

Contractor Qualitative Comments

The final question asked the contractors to “Please share one or two stories of the most extreme or most memorable deferred maintenance or repair situations you encountered when doing a home modification or accessibility project.”

There were 17 useable comments. The collective experience of our team members has unequivocally demonstrated to us that contractors who specialize in aging in place and accessibility issues are 1) passionate about what they do and 2) they care about the clients they serve. The qualitative field of our survey was supposed to be answered with their most memorable issues of deferred maintenance and stories about adding repairs to contracted jobs. Some commentors ignored that instruction to relay success stories of increased accessibility and enhanced quality of life for their clients following a home modification. Others shared with us about the awards they won for the quality and innovation of their work. While heartwarming, we are not including those stories in this report. We include the 17 comments that answered the question asked.

Most (13) were stories about substantial repairs that were required before work on the requested job/contract could commence, two were repairs unrelated to the original job but pressing due to the condition of the particular issues mentioned (porch falling in, soffit with holes).

The location of the original remodel (see figure 18, below on the right) was predominately the bathroom (10, 59%) followed by exterior (6, 35%) and one “whole house” that was so severely neglected and damaged it sold for one quarter of the fair market value it would have if maintenance and upkeep had not been neglected.

Figure 17. Type of Add Ons.

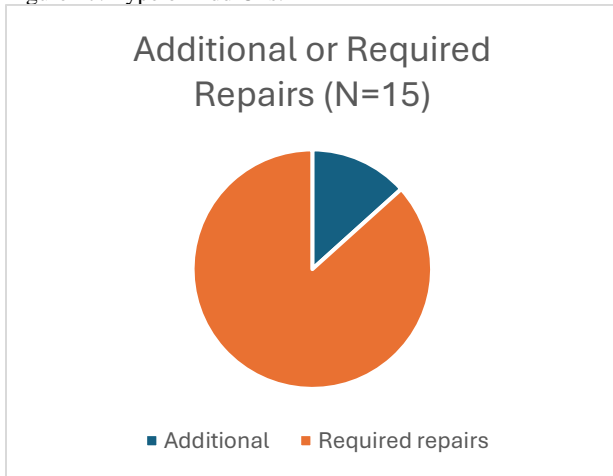
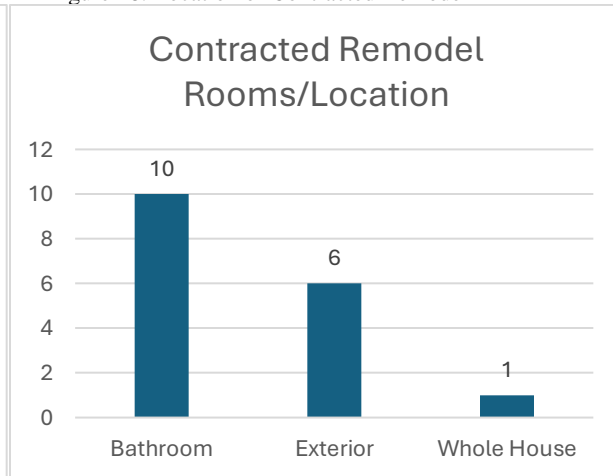


Figure 18. Location of Contracted Remodel



The most frequently cited issues were rot, unspecified (4) and due to leaks (6). Figure 19 below shows the frequency of issues encountered by contractors that had to be dealt with prior to starting the contracted remodels/jobs.

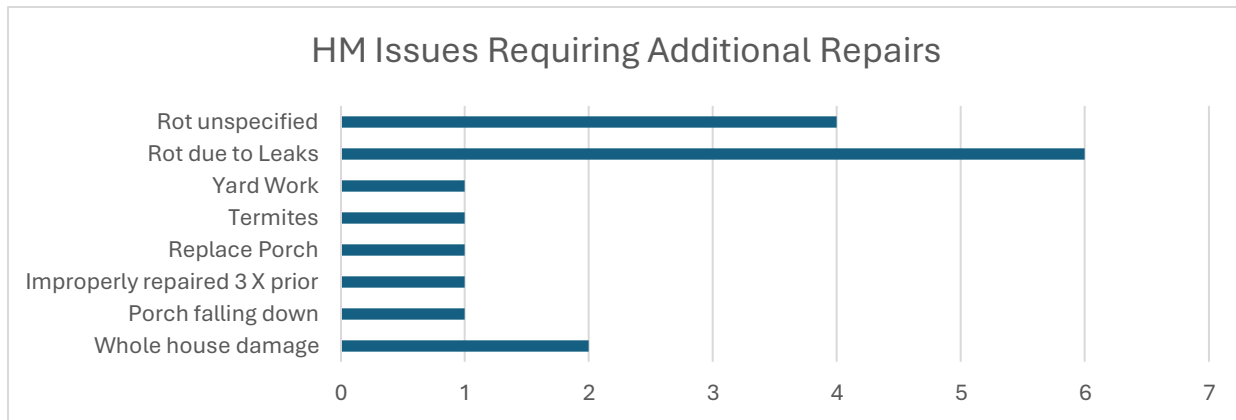


Figure 19. Issues Encountered

Some encountered multiple issues:

“Tried to replace a porch deck to find the *foundation collapsed* under it!”

“Replaced a shower surround and found the framing had been patch three times from the other side, but *never properly repaired.*”

“A client called need to tub - to - barrier free shower conversion... significant rot in the subfloor and a cut out joist below the toilet was noted and quote for repair. Upon demo, further damage was revealed that was well beyond the quoted scope of the job. *This project resulted in a complete to-the-studs and floor joists tear out.* Fortunately, the family had the means to cover the change orders.”

Not all the contractors were so fortunate in terms of being compensated for additional repairs completed. One relayed this story:

“Started a job to remove a Tub and replacement it with a Roll in shower and when we took out the tub and surround the studs were completely eaten up by termites. Above three feet of the stubs and sill plate were completely gone. We had to *completely rebuild the walls and floor* before we could proceed. Because this was a state Funded job *we were not allowed to be reimbursed for the extra work.* we were told you should have anticipated the damage.”

The same contractor shared this story about a client who lived alone and didn’t know her home was rotting beneath her

“Another job we were contracted to do two-bathroom mods in the home, this mods consisted in widening the doors, remove existing vanity and sink, replace with a pedestal sink, replace toilet with ADA Chair height unit, remove tub and surround and convert to a walk-in shower. When we did the demo the main sewer line was cast iron and had rotted below the floor on the toilet

and tub. *Years of neglect had rotted the floor structure* under both the toilet and tub. We had to cut into the main sewer line and *replumb the bathroom suite*. In this case the client did pay us for the additional work. The bottom line for this job the client lived alone *and she had no one looking at her home for decay and she simply didn't know it was occurring* (sic).”

The contractors surveyed reported repairs needed prior to starting jobs for which they had been contracted. Some repairs were due to deferred maintenance and neglect, some were due to ignorance on the part of the homeowners who had no idea about the shape of their homes. Most of the issues encountered had to do with plumbing and rot in bathrooms from leaks or other reasons. This is most likely an artifact of the AiP networks where bathroom remodels are prevalent.

SURVEY 3 RESULTS

Results 3. Homeowner Surveys

Home Maintenance Behaviors in a Sample of 99 Homeowners

Abstract

Ninety-nine homeowners completed the survey most of whom (77%) had resided in single family detached homes for more than five years (91%). Most homes were over 15 years old. Almost all the homeowners reported making decisions about home maintenance (93%) repairs (95%), replacement (96%) and improvements (88%). Ninety-two homeowners (93%) reported having had maintenance, repairs, replacements, or improvements to their home performed in the last year by themselves (2%) or hiring a contractor (98%). Forty-nine (52%) homeowners report doing or hiring maintenance on a regular basis the other 45 (48%) do not do regular home maintenance. When asked why, they supplied the following reasons arranged according to frequency of response: Don't know how to do it (16%), don't know a reliable person to call (16%) don't have the time, don't have the physical ability to do it (11.1%) and don't know what needs to be done (11.1%).

Homeowners reported being aware of situations where the failure to do regular and/or seasonal home maintenance caused damage to their homes (46%) or a more expensive repair than if it had been addressed as part of regular maintenance (35%). Homeowners were very or highly likely (61%) to do maintenance if provided with information about who to call and financing options or if provided with information customized to their home's condition and what need to be done (67%).

Thirty-two homeowners relayed stories of their most memorable situations which ranged from issues with appliances to structural damage resulting from delayed maintenance.

Homeowner Survey Results

Homeowners Homes

Ninety-nine homeowners completed the survey. Close to seventy percent resided in single family detached homes. Seventeen percent reported residing in condominiums and 13% in townhouses or duplexes (Figure 20).

Ninety-one percent of the sample had lived in their homes more than five years and 96% indicated their homes were more than 15 years old.

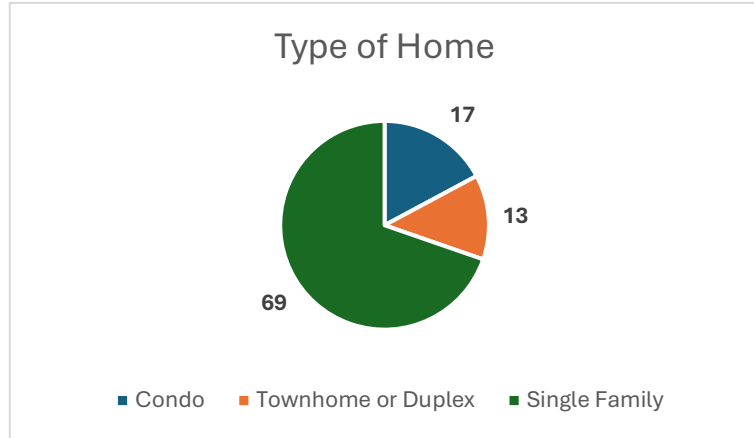


Figure 20 Type of Homeowner Residences

Maintenance of Homes

Homeowners were asked questions regarding decision making for home maintenance tasks and provided with the operational definitions below.

- Maintenance - meaning prevention (e.g., change furnace filter, clean gutters)
- Repairs - meaning fixed things that are broken (e.g., leaky roof, leaky faucet, dishwasher)
- Replacements - (e.g., new furnace, appliances, hot water heater)
- Improvements - meaning room additions or upgrades (e.g., kitchen or bath remodel)

As shown in the figure below, most of the homeowners reported making decisions about home maintenance (93%) repairs (95%), replacement (96%) and improvements (88%).

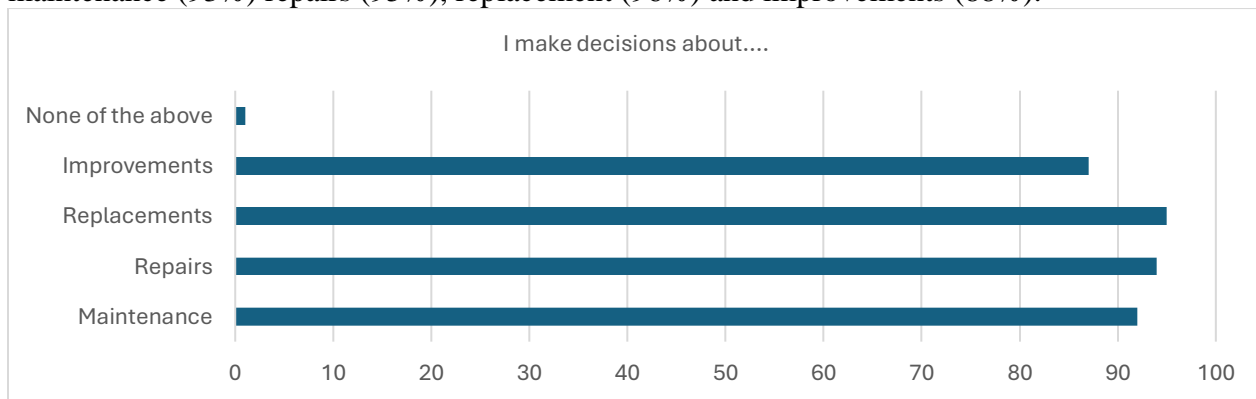


Figure 21 Decisions about Tasks in the Home

Adding the four categories of home maintenance tasks together yielded a composite score that ranged from 0 - none checked to all 4 checked. Eighty-three people (85%) claimed decision making responsibility for all four tasks. Proportionally this was a bit higher for the single-family residences.

Maintenance Tasks Done within the Last Year

Ninety-two homeowners (93%) reported having had maintenance, repairs, replacements, or improvements to their home performed in the last year.

Only two homeowners reported doing all their repairs last year by themselves. The others hired someone (50%) to do the maintenance or did some tasks themselves and hired out other tasks (44%). Seven homeowners did not answer the question. Combining the “Both Hire and DIY” with the “Hire” columns yields a total of 98% of homeowners who hired someone to do repairs at least one time during the past year.

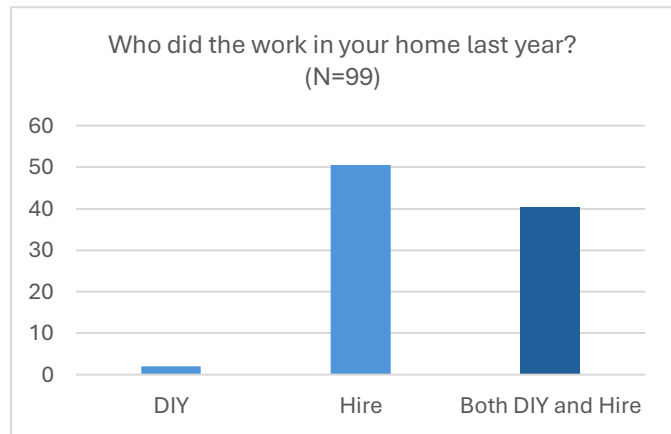


Figure 22. Work Completed by Hire or DIY

Deferred Maintenance or Failure Maintenance

Homeowners were asked two questions regarding the failure to do home maintenance or deferred maintenance:

1. Are you aware of situations where the failure to do regular and/or seasonal home maintenance caused damage to your home?
2. Are you aware of a situation where the failure to do regular and/or seasonal home maintenance caused a more expensive repair than if it had been addressed as part of regular maintenance?

Homeowners reported being aware of situations where the situations where the failure to do regular and/or seasonal home maintenance caused damage to their homes (46%) or a more expensive repair than if it had been addresses as part of regular maintenance (35%).

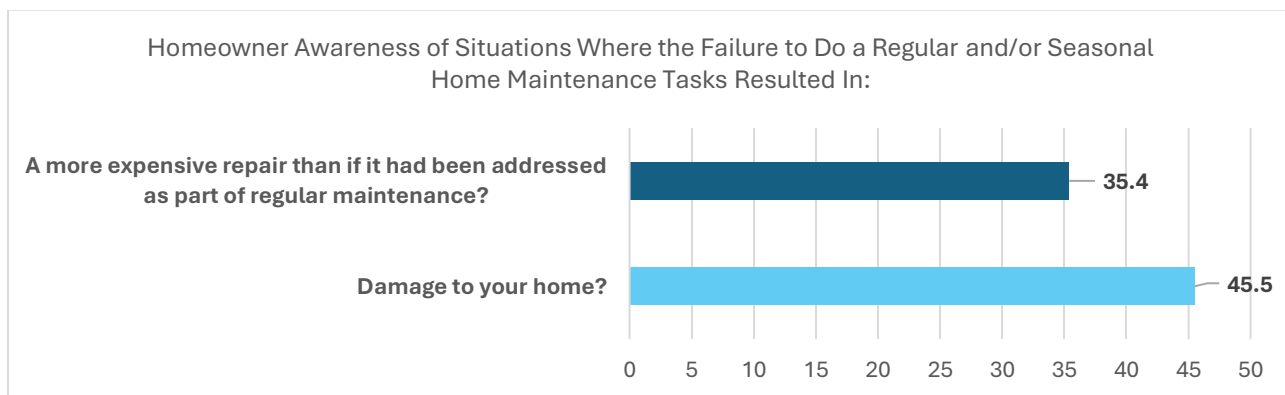
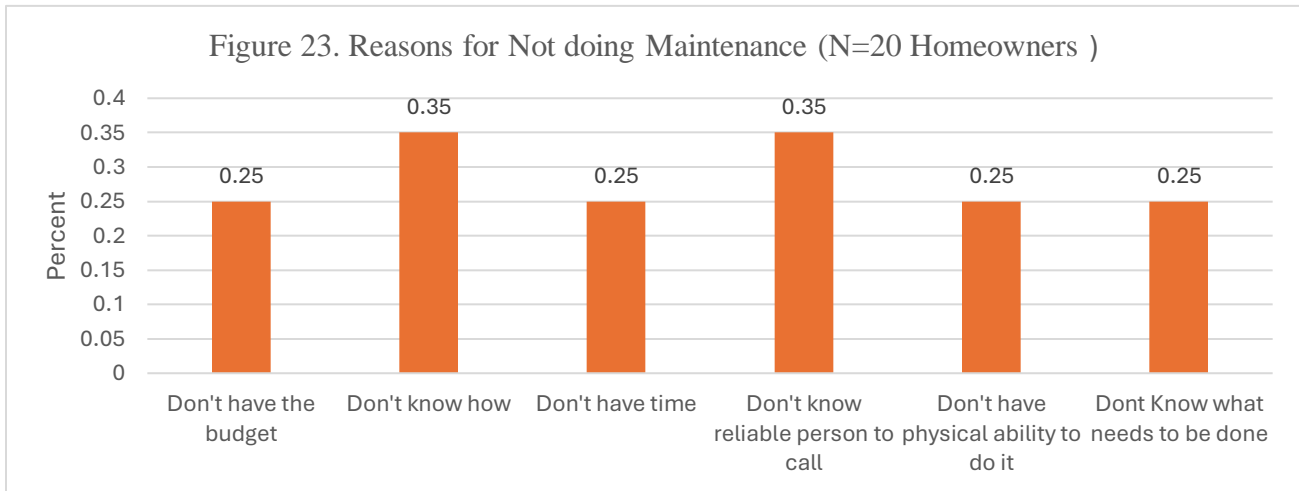


Figure 23. Deferred Maintenance Situations

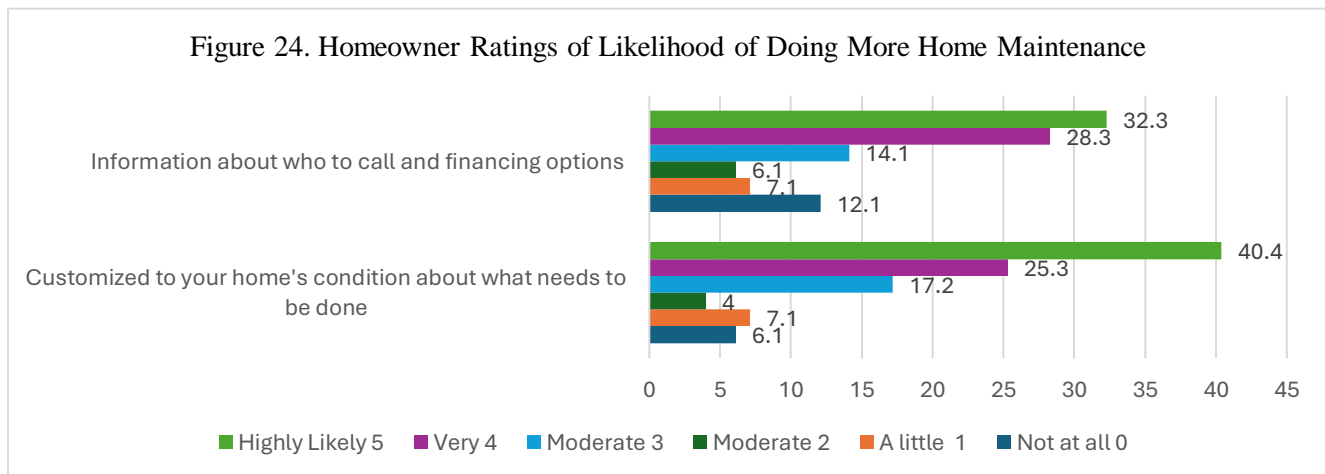
Reasons for Deferring or Not Doing Maintenance

Forty-nine (52%) homeowners report doing or hiring maintenance on a regular basis the other 45 (48%) do not do regular home maintenance. When asked why they didn't do maintenance, the 20 (of the 45) who responded selected the following reasons (check all that apply): Don't have the budget (25%), Don't know how (35%), Don't have the time (25%), Don't know a reliable person to call (35%) Don't have the physical ability to do it (25%) and Don't know what needs to be done (25%).



Likelihood of Doing More Maintenance

Homeowners rated how likely they would be to do more home maintenance if they had information: a) customized to their home's condition about what needs to be done and b) who to call and financing options. As shown in Figure 24. homeowners were very or highly likely (61%) to do maintenance if provided with information about who to call and financing options, or if provided with information customized to their home's condition and what need to be done (66%).



Qualitative Comments from the Homeowners

Homeowners were asked to “ Please share one or two stories of the most extreme or most memorable repair situations you encountered when home maintenance was not done.”

Some people simply forgot their seasonal maintenance.

“Forgot to have air conditioning unit inspected prior to summer season. During summer heat wave, AC stopped working. Needed to call AC company, took them 4 days to come out to house.”

Others let a problem go a little too long resulting in greater damage

“I let a roof leak go for a long time - such that when I did get it repaired, I had to pull out the drywall from the ceiling and part of walls of an upstairs bedroom under the leak and **do mildew abatement.**”

“Failure to order timely gutter repair caused flooding in the basement which required removal and replacement of the flooring and some wall paneling.”

Others didn't know about maintenance required or hired contractors who didn't know how to properly fix issues.

“Didn't know a garage door needed regular maintenance. After 8 years it needs expensive work as a result”

“There were water damage marks near the chimney and although we hired repair people, **they didn't know to extend the flashing up the chimney to stop the leak marks which became worse.** It required more extensive repair work.”

Summary of Key Points for the Three Groups

KEY FINDINGS INFORMAL CAREGIVERS

- ICGs rated HM related stress as high (mean > 4)
- The additional burden of HM tasks was rated high (mean ≥ 4)
- 64% of ICGs were very or highly likely to do more HM if provided with information customized to their home's condition and needs
- 71% of ICGs were very or highly likely to do more HM if provided with information about who to call and financing options
- HM Stress was positively related to likelihood of doing more HM if provided with information customized to their home's condition and needs
- Some ICGs feel at the mercy of contractors and don't know who to call or ask about HM issues
- 73 % (11) had HMIs (e.g., furnace breakdown, plumbing leaks) that disrupted the daily routines of the household with five instances resulting in a temporary (n=3) or permanent move from their home (n=2).

KEY FINDINGS CONTRACTORS

- Close to one-third (31%) of contractors reported that over half of their original jobs included some additional basic home repair and/or maintenance tasks.
- 23% of contractors reported that 50% of repairs made on jobs were actually deferred maintenance repairs
- The most frequently cited repairs were related to plumbing and rot
- Contractors are not always reimbursed when additional repairs are needed

KEY FINDINGS HOMEOWNERS

- 48% of homeowners reported not doing any regular HM tasks.
- 46% of homeowners were aware of situations where the failure to do HM caused damage to their homes
- 35% were aware of situations where the failure to do HM caused a more expensive repair
- 61% of homeowners were very or highly likely to do more HM if provided with information about who to call and financing options
- 67% were very or highly likely to do more HM if provided with information customized to their home's condition and needs

DISCUSSION

These results should be interpreted with caution. For expediency, our samples were drawn from our networks and are true samples of convenience. Nonetheless, the results from the three subgroups are compelling and complement as well as validate each other.

The finding that home maintenance issues add stress and burden to the lives of ICGs caring for PwDs suggest that the topic of home maintenance as a critical precursor to Aging in Place warrants further exploration and should no longer be ignored. Providing ICGs with information may empower them to make changes that in turn, will eliminate objective burden and stressors from their lives. Eliminating objective stressors, may in turn, decrease subjective stress. Providing ICGs with tools to manage home maintenance issues may increase mastery which has been shown to mediate the relationship between stress and depression in ICGS caring for PwDs.

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