
Capstone Experience

Master of Public Health

12-2020

A Qualitative Analysis of Omaha Healthy Kids Alliance's Client Educational Attainment

Shelby Larson
University of Nebraska Medical Center

Follow this and additional works at: https://digitalcommons.unmc.edu/coph_slce



Part of the [Public Health Commons](#)

Recommended Citation

Larson, Shelby, "A Qualitative Analysis of Omaha Healthy Kids Alliance's Client Educational Attainment" (2020). *Capstone Experience*. 127.

https://digitalcommons.unmc.edu/coph_slce/127

This Capstone Experience is brought to you for free and open access by the Master of Public Health at DigitalCommons@UNMC. It has been accepted for inclusion in Capstone Experience by an authorized administrator of DigitalCommons@UNMC. For more information, please contact digitalcommons@unmc.edu.

A Qualitative Analysis of Omaha Healthy Kids Alliance's Client Educational Attainment

Shelby Larson, College of Public Health

Health Promotion

Committee Members

Committee Chair: Melissa Tibbits, PhD

Chandran Achutan, PhD, CIH

Athena Ramos, PhD, MBA, MS, CPM

Abstract

Housing and physical health are inextricably linked. Environmental hazards such as lead poisoning, radon, and mold negatively impact the health of a home's occupants, particularly children. Omaha Healthy Kids Alliance (OHKA) was founded in 2006 to address these environmental hazards through education and construction interventions with the mission "to improve children's health through healthy homes." OHKA clients are primarily served through two direct service programs and are evaluated pre- and post-intervention for changes in educational attainment, behavioral outcomes, environmental characteristics, quality of life, and health. A program evaluation was conducted to 1) determine how OHKA clients utilize environmental education post-intervention, and 2) determine areas of opportunity to refine programming to increase educational attainment, behavior change, and overall client satisfaction. Semi-structured interviews were conducted with six clients from 2019 and were recorded, transcribed, and analyzed to identify emerging themes and determine how clients utilized the in-home environmental education OHKA delivered. General experience in OHKA programming was positive and linked to both the construction intervention and in-home education received, but increased community knowledge of home hazards and general OHKA programming were consistently listed as an area for improvement. All clients reported using OHKA recommendations in their own homes post-intervention, and cited an increased quality in health post-intervention. Recommendations were given based upon the results of the interviews.

Specific Aims

It is estimated that Americans spend 90% of their time indoors (EPA, 1989), with the majority being time spent inside the home. Home environments have an extreme effect on an occupant's physical health and development. Children are especially susceptible to these environmental hazards, as their rapidly growing bodies absorb more toxins than adults (Agency for Toxic Substances and Disease Registry, 2002). Omaha Healthy Kids Alliance (OHKA) is a children's environmental health nonprofit in Omaha, whose mission is to improve children's health through healthy homes. OHKA primarily serves low-to-moderate income households, where families make 80% or less of the area's median household income, in two direct service programs: Asthma In-home Response (AIR) and Championing Energy Efficient Rehabilitation (CHEER). These two programs work using an intervention model to permanently improve the health of the home and the health behaviors of the occupants.

OHKA has traditionally measured its programmatic impact along five lines: knowledge gained, behavioral outcomes, environmental changes, quality of life, and health impacts. This is measured using surveys delivered during the initial home assessment and then again at 6 month- and 12-month follow up. While these educational surveys are identical in the questions asked to help understand health behaviors over time, a greater understanding of knowledge gained and client experience within OHKA programs has not yet been studied.

The specific aims of this program evaluation were to understand the attitudes of the participants towards the condition of their housing, how OHKA's intervention contributed to the overall health of their family, how participants utilized the in-home education to improve their home's condition, and overall program satisfaction. Past research has shown the link between housing condition and health outcomes, but this study seeks to examine the deeper role of education on behavior

change in the larger context of improving health outcomes. Information from clients on these areas will help guide future healthy homes education and training programs within OHKA.

Significance

The link between health disparities and the built environment is well-established. Environmental health and science research has grown significantly over the last 20 years which has proven that the built environment, including housing structures people live in, has “profound, directly measurable effects on both physical and mental health outcomes,” especially in lower-income or minority populations (Hood, 2005). Further, it is reported that communities with poor infrastructure and inadequate housing are more susceptible to environmental diseases and injuries, impeding their quality of life and their ability to succeed (Jacobs, 2011).

Maslow’s hierarchy of needs establishes that the foundation of a human’s needs consists of physiological components - air, water, and shelter (Zavei & Jusan, 2012). However, Maslow’s hierarchy does not capture the nuances of what “shelter” is. The United Nations Habitat Agenda defines “adequate shelter” as consisting of more than a simple structure to protect a person from the elements. Adequate housing and shelter is defined as providing privacy; adequate infrastructure with structural stability and durability; ventilation, heating, waste management; suitable environmental quality; accessible location in regards to work and basic facilities; all of which should be affordable (UN-Habitat, 2003). Without these components, the health of the occupant dwindles and leads to other health issues, including asthma, obesity, and decreased mental health.

Children are especially susceptible to health issues arising from environmental hazards related to housing. Lead poisoning in children under 6 leads to lower cognitive functioning and delayed development; severe uncontrolled pediatric asthma affects children’s school attendance, grades, and overall wellbeing; mold and other air pollutants severely inhibit the development

and function of a child's respiratory system; high levels of radon gas can cause lung cancer; long-term exposure to low levels of carbon monoxide can lead to neurological damage (Jacobs, 2011). Many of these environmental hazards present significant threats to low-income and minority families, who often live in older and poorly maintained housing.

Improving the quality of older housing stock and the health of families is what OHKA's programming is based on. Founded in 2006 as a lead poisoning prevention organization, OHKA established itself as a valued community resource for community education on environmental hazards. In 2010, OHKA officially expanded their mission to include other facets of healthy housing – volatile organic compounds, radon gas, fire hazards, safety hazards, mold, among others. Their mission “to improve children's health through healthy homes” has evolved to serve families primarily in East Omaha that fall at or below 80% of the Area Median Income. A cornerstone of the organization is their Healthy Home Interventions. These interventions are designed at a cross-section of case management and construction rehabilitation. The environmental quality of the home is tested by trained OHKA inspectors, using a proprietary tool called the HEART Tool (Hazard Evaluation and Rating Test) to assign a grade to the home's health and safety pre- and post-intervention. During the home inspection, OHKA Educators discuss general healthy home information with the client, using a survey to assess health behaviors and general physical health. This also includes a supply kit to help address lead hazards in the home. If a client is enrolled in OHKA's Asthma In-home Response (AIR) Program, they also receive a customized supply kit to mitigate their child's asthma triggers. Clients are then moved into case management, and if eligible, are enrolled in OHKA's CHEER program. Through CHEER, families can receive construction upgrades to their home to improve health outcomes at no cost to the client. Finally, clients are moved into follow up, where at both six and 12 months post- intervention, they respond to the same survey administered at the first

inspection. This survey helps track a client's behavior changes over time and is used to highlight OHKA's programmatic impact.

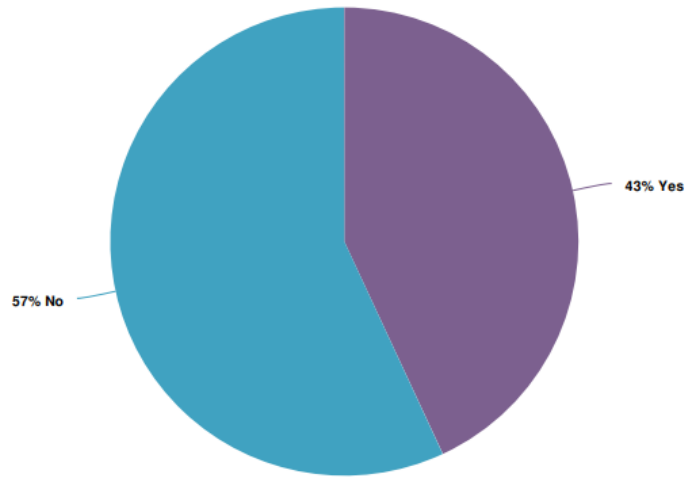
Murray et. al (2017) determined that providing mite impermeable mattress protectors to families with asthmatic children reduced the number of hospital visits related to asthma exacerbations, and Rabito et. al (2017) found that using cockroach bait reduced exposure to cockroaches in asthmatic children. These two studies support OHKA's practice of providing supplies and education on how to mitigate in-home asthma triggers to families.

Other related research includes the examination of the link between the built environment and physical health. Xiao et al. (2018) determined that housing conditions have indirect effects on mental health, and Saegert et al. (2003) found in a systematic review that housing interventions that improve the environment report statistically significant health improvements. However, there is limited literature supporting the connection between both provision of health education and structural upgrades and their combined impact on improved health outcomes.

Background

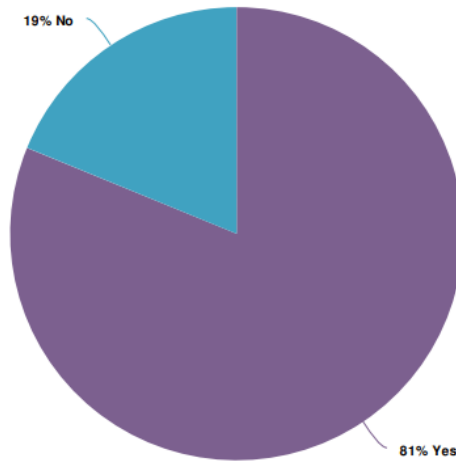
Internal data from OHKA surveys show that programming is potentially changing the health behaviors of OHKA clients. From all 2019 responses on the Initial Educational Survey (n=102), 43% of clients reported someone in the home visiting the ER or being hospitalized in the previous six months. Of these ER visits, 18% were due to asthma or respiratory issues. 81.2% of all respondents also reported using candles, air fresheners, and/or harsh cleaning chemicals. 40.6% of respondents reported not having a working carbon monoxide detector (OHKA, 2020). See the figures below for response rates relating to ER visits and VOC usage.

11. Have you or anyone in your home visited the emergency department or been hospitalized in the past 6 months?



Value	Percent	Responses
Yes	43.1%	44
No	56.9%	58
Totals: 102		

19. Do you use air fresheners, candles, or harsh cleaning chemicals?



Value	Percent	Responses
Yes	81.2%	82
No	18.8%	19
Totals: 101		

Source: OHKA Educational survey – initial.

Data collected from survey respondents at the 6-month follow up survey showed improvements. Only 25.6% of respondents reported going to the ER in the previous six months, with only one visit being related to asthma. Also worth noting is the percentage of clients reporting usage of chemicals containing VOCs – 76.9% reported they do not use them in the home. Moreover, 100% of respondents reported having a carbon monoxide detector in the home. A significant limitation worth noting is the historically low response rate for follow-up surveys: in 2019, the response rate among OHKA clients was 38% (OHKA, 2020).

While the educational survey helps guide intervention planning and program refinement, historically low response rates from follow-up surveys don't provide as much certainty that the education delivered to families works in context of the larger intervention. Currently, the follow-up post-educational survey takes less than 10 minutes to complete and does not ask clients to elaborate on their experience or ask how they are using the information in their homes. With this in mind, the purpose of this program evaluation was to answer the following research questions:

- (1) To what extent are participants satisfied with OHKA services?
- (2) What are the participants' attitudes towards the condition of their housing?
- (3) How has OHKA's intervention contributed to improving the health of participants' families?
- (4) How do participants utilize the education OHKA delivered in their homes?

Methods

Participants

Participants in this study consisted of OHKA clients who were served in 2019. These clients received at minimum a Healthy Home Assessment and tailored Healthy Home Report and Supply Kit. Clients were prioritized based on those who had completed a follow-up survey, as

they had an established relationship with OHKA post-intervention. Initial contact was made with clients over the phone, and both tenants and homeowners were recruited to participate. Four English-speaking clients and two Spanish-speaking clients, all homeowners, agreed to participate in the study. All participants were women, and all but one were mothers. Five participants received a construction intervention in addition to the Supply Kit and Healthy Home Assessment. This intervention was tailored to their home condition and health considerations. The average cost of the home interventions was \$3,373.30. The top common repairs in each intervention were venting the dryer exhaust to the exterior, gutter repair and replacement, mold remediation, and HVAC system repair.

Interviews

Interviews were conducted via phone with participants using a semi-structured interview guide. The interviews with English speakers were audio recorded and transcribed verbatim using Otter.ai. Interviews with Spanish-speakers were conducted over the phone, transcribed, and translated through TranscribeMe. Translations of the interviews in Spanish were reviewed by a bilingual staff member at OHKA using the audio file for comparison. The average interview length for participants was 22 minutes and 20 seconds. Interviews were analyzed using an open coding system - participant quotes were assigned codes, and quotes with the same code were grouped together to develop themes. The questions in the interview guide correspond to the four research questions: to what extent are participants satisfied with OHKA services; what are the participants' attitudes towards the condition of their housing; how has OHKA's intervention contributed to improving the health of participants' families; and how do participants utilize the education OHKA delivered in their homes?

Results

Results from the qualitative interviews have been organized into the research questions posed.

Research Question #1: To what extent are participants satisfied with OHKA services?

All participants reported being satisfied with OHKA programming. Even the client who did not receive a construction intervention reported being satisfied with the education OHKA delivered to help improve the health of her home and family. Within overall program satisfaction, subthemes were developed to identify what specifically was satisfactory. A majority of clients identified the environmental education and recommendations as the key reason for their positive experience within the program. OHKA staff members' expertise in the housing field was mentioned as a factor for satisfaction among participants, as well as OHKA's availability to answer questions or review the program information with clients. OHKA's ability to save families money by providing structural upgrades was also mentioned as a key factor of one client's satisfaction with the program.

"I thought I was going to put off college, but then all of the sudden we had this help, you know, and so I'm actually in college right now because of the help that OHKA gave."

Another participant discussed money saved by using green cleaning recipes:

"I make the [cleaning] solution a lot, and they gave a printout of different solutions and stuff, so I really follow that. They're usually, like, quite often a lot cheaper than buying the stuff; and you don't really know what you buying and spraying."

While all participants were satisfied with the work OHKA performed in their home, some clients reported feeling frustrated and unsatisfied with the contractors employed through City of Omaha's Lead Hazard Control (LHC) program. LHC remediates lead-based paint inside the home, and is managed by the Omaha Planning Department. The participants who were dual enrolled mentioned a particular contractor by name and reported that she had not done her job properly and that she didn't seem to care to help at all. By contrast, all clients who received the

construction intervention commented on the professionalism and expertise of OKHA's contractor.

"What I loved about Matt is that he was very thorough. Every step he did, he told us about it before he did anything, and he just walked us through it."

"We had construction companies in the past take advantage of us or come into our home and promise work and then do shoddy jobs. So after getting this work done, and having such a trustworthy team of people through you guys, I was able to get my mom the references she needed for the work on her home."

While reporting satisfaction within OHKA programming, clients also remarked that an area of improvement for the organization was an increased community awareness of their services. When asked how OHKA programming could be improved, one client remarked how she learned of OHKA in the first place:

"I did not know that this [OHKA] existed. I learned about them at a community event. And I would like them to do it more often because there are many people who have children with different needs, such as asthma; there should be more information. I thank you because through this, my son's health improved a lot."

Some clients commented that the issue of lead poisoning, especially in regards to living in an older home, is not as well-known as it was when Omaha was first declared a Superfund site. One participant, who worked in Omaha Public Schools, recounted a student she had taught who reported he had a learning disability because his mother said he had an elevated blood lead level as a child. In thinking about her home, and the greater Omaha Lead Site, she commented:

“And it bothered me because we have quite a few children who have a learning disability. And I would be willing to say that part of it is because of lead within the house. It’s either in the soil or it’s in the dwelling where they live.”

Research Question #2: What are the participants’ attitudes towards the condition of their housing?

Generally, all participants reported positive attitudes towards the condition of their housing. All but one participant lived in homes built in the early to mid-1900s. Older homes often contain hazards such as radon, lead based paint, and have greater risk of developing issues related to pest intrusion, mold, and ventilation problems (OHKA, 2020). Many participants reported general satisfaction with their home condition, but cited concerns that were chronic and largely due to the age of the home.

“The roof is leaky and is causing damage to our ceilings. And then, I don’t know if there’s mold in the attic, I’m going to assume there is because of the leaking that’s gone on for years, which cannot be good. That would be my main concern, which we’re working on.”

While OHKA programming helped improve the condition of participants’ homes, all but one participant cited remaining concerns in their homes. The concerns cited by participants fall outside the scope of a traditional OHKA home intervention: a leaky roof, a back porch with structural issues, corroded water pipes, mobility concerns with laundry appliances in the basement, and damaged exterior siding.

“From 1 to 10...my home is over 105 years old...I’d say, for being 105 years old, I’d probably give it a seven and a half, close to an eight. Just because especially with all the programs that I was available for helped out substantially, a lot. But at the same time,

you know, it's more of the heavy duty stuff like the [water] piping...we're still trying to figure out how we're going to do the piping.”

From the participants interviewed, there was little understanding of housing components before working with OKHA. One client discovered that her home needed entirely new pipes after her bathroom drain consistently clogged. Another client had never examined the ductwork in her home until dirt and a sewage smell emitted from the air vents when she turned the furnace on. This lack of knowledge on housing systems and maintenance schedules can increase risk of developing larger issues later on, as OHKA often sees in client homes. Over 85% of clients served by OHKA are considered low-to-moderate income, which often means that clients cannot often afford repairs from a reputable contractor and instead enlist the help of friends, repair it themselves, or wait and hope that the issue does not present itself until clients can afford a proper repair.

“When we spoke to Burton [they] said to get all new pipes would be \$21,000. I don't know how to do that. And so I'm praying our pipes just don't bust. Because Matt from OHKA says it's pretty close, like it's on the verge. If it does, it could flood the basement. I don't know how....I don't know how, like we don't even make that much, I don't know how to pay for that.”

While participants generally have a favorable attitude towards their housing, there are many areas to improve greater understanding of home hazards and repairs that can prevent larger, costlier repairs in the future.

Research Question #3: How has OHKA's intervention contributed to improving the health of participants' families?

In terms of both mental and physical health, participants saw improvements related to OHKA's intervention. All but one client reported a marked change in their and their children's health post-intervention. The frequency of asthma attacks was mentioned as a key change in health among the children, but parents also reported general mental and physical health improvements. When remarking about general health improvements, One client reported a noticeable uptick in mental health: "the adults in the home aren't stressed about, you know, this serious financial issue that...had us up at night. So I would say, for the kids, we're happier people, and we are so blessed from that whole scenario."

Changes in health condition were reported to be in conjunction with other factors, but general health improvement was remarked by participants. In regards to her daughter's allergic reaction of hives and respiratory illness, one participant remarked that the combination of OHKA's intervention of replacing her HVAC system, replacement of her carpeted floor with vinyl planks, and a new allergy shot all improved the frequency of hive breakouts.

"it could be due to like, a few different things. Like the floors, the HVAC system, and the shots, is what I'm going to attribute that to, because they all three probably played really well together. And the first two are, you know, because of OHKA, so I'm gonna say that right now...she can breathe and her nose is clear."

Another influential factor in the general increase of health conditions among participants could be tied to the behavior changes of the participants themselves. All but one client reported using wet dusting methods when cleaning, and when asked, the client who did not use it claimed to not know about the practice. Behavior changes related to ventilation (using vent fans and changing furnace filters) were listed as practices also adopted by clients. A majority of clients reported using VOCs less (if at all) once they were made aware of them.

"I try not to use [VOCs], so as not to have problems in the future."

Tied to the theme of behavior change was use of supplies, which was reported by all participants. While not all supplies could be recalled, it was evident that clients remembered most of the supplies provided to them and their proper usage. When asked about her usage of VOCs, one client said she no longer uses VOCs because of the essential oil diffuser OHKA had delivered as part of her supply kit.

“I haven’t used them [VOCs] since you been out. I have the machine you put the oil in...and that’s all I use since you came out.”

Whether from the structural intervention itself or the individual behavior changes, participants ultimately acknowledged the positive change in health outcomes post-intervention.

(4) How do participants utilize the education OHKA delivered in their homes?

Participants were consistent in their reported knowledge gained and how they utilized OHKA’s in-home education post-intervention. Abstaining from the use of VOCs was mentioned, as well as issues related to ventilation - both of which are discussed at the initial visit and during the review of the client’s healthy home report. Clients also reported an increased awareness of home hazards in general, and remarked on not being aware of them prior to the intervention. One client reported that the soil sketch attached to their report (which details the levels of lead in their soil) was incredibly helpful because they didn’t know much about lead at all and found out from their child’s school that their child was lead poisoned. Lead and VOCs were referenced the most as environmental hazards that clients knew the least about, including simply being aware of the hazard in the first place or the level of risk it posed.

"I just wasn't even aware, nobody had ever said anything like that around me and so finding out that those [air fresheners] were harmful to your health, you know, it just makes me kind of frustrated with like our government, that they let them sell them even

to us. It just doesn't make sense that people would be allowed to make money off of hurting somebody else's health."

"Being aware of the environment, in and out of our house in itself was like a huge eye opener, because I had no idea about lead...being in our soil or us being in a danger zone."

In general, participants cited the information they received from OHKA as being the most beneficial component of the program. In addition, participants reported feelings of helplessness before OHKA's intervention and before OHKA's education delivery and supply provision. This helplessness originated from a lack of knowledge about the issues that were occurring in the home prior to OHKA's intervention, and the feelings of helplessness were not as highly reported post-intervention.

"When OHKA came in, we had no idea when he told us what was wrong. We were like in complete despair, because we had no idea what we were going to do...but when OHKA came in and they got the funds to do that, I can't even describe what that did for our lives, because...before we couldn't sleep. It was insane, the stress and the pressure that this was causing us, because how were we going to heat our home? Where were we going to go during the winter?"

Discussion

Although each participant received an individualized intervention in terms of construction and supply delivery, all participants echoed similar perspectives on the quality of OHKA programming and the value of the environmental education received. Interestingly, the information and recommendations that OHKA provided clients was mentioned more for being a reason that clients were satisfied with OHKA programming. One client specifically referred to

the work performed as being a reason for client satisfaction, but overwhelmingly participants cited the educational component of the intervention as the source of greatest satisfaction.

OHKA has traditionally measured health outcomes as physical: comparing the number of unexpected doctor visits, hospitalizations, and asthma attacks pre- and post-intervention.

AResults from historical data show that these physical health markers improve post-intervention. In comparing 3 years of AIR client data from 2015-2018, OHKA clients observed a 54% decrease in missed school days due to asthma and a 57% reduction in unplanned hospital visits (OHKA, 2020). From these semi-structured interviews, it is evident that OHKA improves mental health outcomes, especially for the caregivers of the home and family.

It was difficult to attribute the OHKA intervention as the sole reason physical health conditions improved, but the fact that the OHKA intervention occurred along with other health behavior changes suggests a connection between the intervention and improved health among participants, especially considering the educational attainment and supply utilization of participants.

Strengths and Limitations

The semi-structured interviews provided deeper insight into the typical post-intervention educational survey that is administered to OHKA clients. Performing interviews over the phone provided a COVID-safe way for participants to give feedback on their experience during OHKA's intervention. All participants were in their homes when the interviews were conducted, which could have helped with recall memory on the intervention itself or the materials still utilized in the home post-intervention.

By using a semi-structured format for interviewing, participants were able to share their perspective without being constrained to a Likert survey. This led to longer answers that were

able to capture the components of OHKA programming that are beneficial to clients and the nuanced recommendations from each participant on future program refinement.

Although efforts were made to include both tenants and homeowners in this evaluation, the participants were all homeowners. Perspectives from tenants could have illuminated the effectiveness of OHKA's intervention in terms of client education and overall satisfaction with OHKA programming. Completing a construction intervention in a rental home requires collaboration with the tenant's landlord, and generally speaking, when a tenant enrolls in OHKA construction programs, it is often because their landlords have been unable or unwilling to provide repairs themselves. This unique situation could significantly alter a tenant's experience within OHKA's programming.

In addition, all participants except for one received a construction intervention: this could also affect the findings due to the fact that each home received at least a \$2,000 construction intervention at zero cost to the homeowner. However, the home that did not receive a construction intervention did receive a customized AIR supply kit geared to address the child's asthma triggers in the home, which includes \$400 worth of materials to mitigate a child's asthma.

While Spanish-speaking clients were included in the study, their interviews were much shorter in duration than those of English-speaking clients (although one English-speaking participant also had a short interview lasting 15 minutes). Both Spanish-speaking interviews were completed in around 10 minutes. This could be due to the fact that the interviews were conducted at inopportune times for the participants, or that the interviewer did not allow time for participants to elaborate on their answers. These shortened interviews could contribute to a lack of complete understanding of client perspectives served through OHKA programming, but their answers aligned with those from the longer interviews, so codes and themes were still able to be

developed. While Spanish-speaking clients were included in the study, the fact that the interviews were short and few in number compared to English-speaking clients creates a limitation that a comprehensive perspective of OHKA Spanish-speaking clients was not received.

Finally, some participants were dual enrolled in both OHKA programming and programming with the City of Omaha's Lead Hazard Control program. While participants for the most part were able to delineate between the work conducted by the City and the work conducted by OHKA, one participant did conflate the two programs since both programs conducted interventions at the same time. This confusion between the two programs could alter the level of satisfaction that the participant attributed to OHKA's programming.

Recommendations

Based on the findings of this study, the following recommendations may be utilized to increase the effectiveness and impact of OHKA programming:

1. Omaha Healthy Kids Alliance should increase general community awareness of environmental hazards, especially lead poisoning, as part of its ongoing outreach strategy.
2. As OHKA continues to serve clients dual-enrolled in their programming and the City's LHC program, the partnership should include a strategy to ensure quality work is being performed in client homes by qualified contractors.
3. Future considerations could be made by OHKA to also increase the amount spent per housing intervention. While all participants reported being satisfied with OHKA programming, all participants still cited issues within their homes (some concerns that were mentioned at the initial educational survey). This indicates that while OHKA

programming improved the conditions of the participants' homes, it could also be expanded to include upgrades beyond the current scope of construction interventions performed.

4. OHKA should prioritize home maintenance schedules in communication with clients on how to keep and maintain their home so clients can avoid cost prohibitive issues later on.
5. Future program evaluations for OHKA programming should include an in-depth comparison of English and non-English speaking clients to provide greater context for client satisfaction and educational attainment. While this evaluation included perspectives from Spanish-speaking clients, it did not provide an in-depth comparison of their experience compared to English-speaking clients

Conclusion

Through its 14 years operating in the Omaha area, Omaha Healthy Kids Alliance has served thousands of families and physically improved hundreds of homes in the Omaha area.

Participants in OHKA programming report feeling healthier in their homes, and further examination of behavior practices among participants revealed that the information and supplies OHKA provided clients was valuable to their experience while enrolled in their respective programs. Overall experience in OHKA programming was positive, and participants encouraged an increase in community awareness about environmental hazards in residential settings.

Future program considerations for OHKA could including expanding the scope of their construction interventions, reexamining partnerships and the quality of the work performed by partners' contractors, and working to educate the greater community about OHKA programming and general healthy home maintenance. Future organizational research should include the examination of the role that educational delivery and supply provision have on improving health

outcomes, and the comparison of English-speaking clients to non-English speaking clients in terms of overall program satisfaction.

Literature Cited

Agency for Toxic Substances and Disease Registry. (2002, November). *How the Body Works: Differences Between Adults and Children*.

Bandura, A. (1977). *Social learning theory*. Prentice-Hall.

Hood, E. (2005). Dwelling Disparities: How Poor Housing Leads to Poor Health. *Environmental Health Perspectives*, 113(5), A311–A317. <https://doi.org/10.1289/ehp.113-a310>

Jacobs, D. E. (2011). Environmental Health Disparities in Housing. *American Journal of Public Health*, 101(S1), S115–S122. <https://doi.org/10.2105/ajph.2010.300058>

Omaha Healthy Kids Alliance. (2020). Intake and Assessment. Internal OHKA report: unpublished.

Omaha Healthy Kids Alliance. (2020). Educational survey – initial. Internal OHKA report: unpublished.

Omaha Healthy Kids Alliance (2020). Educational survey – post. Internal OHKA report: unpublished.

Murray, C. S., Foden, P., Sumner, H., Shepley, E., Custovic, A., & Simpson, A. (2017). Preventing Severe Asthma Exacerbations in Children. A Randomized Trial of Mite-Impermeable Bedcovers. *American Journal of Respiratory and Critical Care Medicine*, 196(2), 150–158. <https://doi.org/10.1164/rccm.201609-1966oc>

Rabito, F. A., Carlson, J. C., He, H., Werthmann, D., & Schal, C. (2017). A single intervention for cockroach control reduces cockroach exposure and asthma morbidity in children.

Journal of Allergy and Clinical Immunology, 140(2), 565–570.

<https://doi.org/10.1016/j.jaci.2016.10.019>

Rosser, F. J., Forno, E., Cooper, P. J., & Celedón, J. C. (2014). Asthma in Hispanics. An 8-Year Update. *American Journal of Respiratory and Critical Care Medicine*, 189(11), 1316–1327. <https://doi.org/10.1164/rccm.201401-0186pp>

UN-Habitat. (2003, November). *The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action*.

https://www.un.org/en/events/pastevents/pdfs/habitat_agenda.pdf

U.S. Environmental Protection Agency. 1989. Report to Congress on indoor air quality: Volume 2. EPA/400/1-89/001C. Washington, DC.

Zavei, S. J. A. P., & Jusan, M. M. (2012). Exploring Housing Attributes Selection based on Maslow's Hierarchy of Needs. *Procedia - Social and Behavioral Sciences*, 42, 311–319. <https://doi.org/10.1016/j.sbspro.2012.04.195>

Appendix A: Interview Guide

(1) To what extent are participants satisfied with OHKA services?

- (list reported top 3 concerns from initial educational survey). During our first visit, you reported that your top three concerns in your home were ____, ____, and _____. How did participating in the OHKA program help you address these concerns in your home?
- How satisfied are you with the services you have received from OHKA?
- How could Omaha Healthy Kids Alliance programming be improved?
- (if home is in OLS and received soil protection information) Included with your healthy home report was a soil sketch detailing the levels of lead in your yard. How helpful was this information to you and your family?

(2) What are the participants' attitudes towards the condition of their housing?

- Overall, how would you describe the condition of your home?
- What, if anything, would you change about the current conditions of your home?
- What are your three biggest concerns about your home? Why?

(3) How has OHKA's intervention contributed to improving the health of participants' families?

- Overall, how would you describe the health of your child?
- (for families with a completed follow up survey). You reported that (6/12) months after OHKA's intervention, unplanned doctor visits in your home (increased/decreased). What other changes in your child's health have you noticed since OHKA completed their intervention?
- In what ways did the OHKA intervention help you understand the impact of the home environment on your child's health?

(4) How do participants utilize the education OHKA delivered in their homes?

- When OHKA first came out to complete the home assessment, an OHKA educator discussed wet dusting methods as a way to clean. How often do you use this cleaning method? (if not often – What prevents you from using this cleaning method)?
- Part of the educational survey contained information on volatile organic compounds, or VOCs. VOCs exist in candles, air fresheners, and harsh cleaning chemicals. How often do you use or do not use these types of items in your home and why?
- When OHKA first visited your home, they gave you a supply kit. This supply kit was delivered to help you in cleaning lead hazards (and mitigating asthma triggers, if an AIR client). How have you used the items you received from this supply kit since we gave it to you?

CV – Shelby Larson

Educational Summary

2018-present: Masters of Public Health (MPH)
University of Nebraska Medical Center, Omaha, NE
Concentration: Health Promotion

2012-2016: Bachelor of Arts (BA)
University of Nebraska – Omaha, Omaha, NE
Major: English and Women’s and Gender Studies
Minor: Political Science

Professional Summary:

2020-present: Manager of Community Engagement, Omaha Healthy Kids Alliance,
Omaha, NE

Responsible for educating the community about OHKA’s programs and services by managing all outreach, communications, and marketing programs within the organization

2019-2020: Community Engagement Coordinator Omaha Healthy Kids Alliance,
Omaha, NE

Assist in managing special projects, websites, and social media presence within the organization to promote engagement with the larger Omaha community

2017-2019 Administrative Assistant, Omaha Healthy Kids Alliance, Omaha, NE

Assist with administrative duties of the organization, including accounting, vendor negotiation, hiring/onboarding new employees, and donor management

2015-2017 Kindergarten Paraprofessional, Omaha Public Schools, Omaha, NE

Assist the classroom teacher in enhancing the learning experience of students, including tutoring and supervision

Professional Affiliations:

2019-present: National Environmental Health Association