Establishing Priorities for Home Visiting Research Approaches and Methods

HARC — Home Visiting Applied Research Collaborative

BACKGROUND

Home visiting (HV) research has continued to grow in recent years and with this growth comes a need to identify innovative and rigorous methods and approaches to strengthen current HV evidence and promote positive outcomes for families.[1] The Home Visiting Applied Research Collaborative (HARC) identified three specific domains with particular relevance to HV research: 1) Community Engagement, 2) Implementation Science, and 3) Research Design. One of HARC's objectives is to build capacity for using innovative research methods and approaches. To this end, HARC conducted a modified Delphi Process[2] to generate recommendations on methods and approaches in each domain (Community Engagement, Implementation Science, Research Design) deemed to be both **innovative** for HV research and **priority areas** for which the field of HV should develop resources.

METHODS

Participants

HARC staff reviewed (a) the HARC membership list, (b) presenter and attendee lists from the 2024 HV Summit, (c) HARC research meetings, and (d) publicly available NIH RePORTER data to identify HV researchers. A total of 238 HV researchers were identified and sent an invitation email to take part in the Delphi Process. Sixty HV researchers completed an eligibility screener, provided informed consent, and completed the first Delphi survey. Participants were required to be at least 18 years of age, speak English, and have conducted HV research for at least three years; no researchers who began the eligibility survey were deemed ineligible. Forty-five of 60 (75%) researchers completed the second survey (Figure 1).

Data Collection

HV researchers initially completed an online survey that asked them to brainstorm methods/approaches in the three focal domains: Community Engagement, Implementation Science, Research Design. For each domain, researchers were instructed to list any methods or approaches that they believed would be valuable for the home visiting community. Respondents could list as many unique responses as they wanted within each domain. Two HARC Leadership Team members reviewed responses and combined responses with similar/identical meaning (e.g., hybrid trials and effectiveness-implementation trials were combined into "hybrid effectiveness-implementation trials"). This generated a final set of methods/approaches for the second online survey sent to all 60 respondents asking them to respond to two questions for each method/approach:

Figure 1. Participant Flow: HARC Methods Delphi

- This method/approach is **new and innovative** for home visiting research; and
- HARC should **prioritize developing resources** for this method/approach.
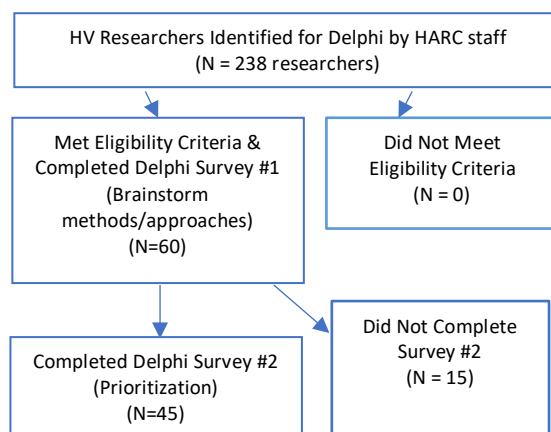
Responses were given on a 7-point Likert Scale (1 = "strongly disagree"; 4 = "neither agree nor disagree"; 7 = "strongly agree").

RESULTS

Community Engagement Approaches (Figure 2)

Nineteen items emerged from the first Delphi survey for the Community Engagement domain. On the second survey, seven of the 19 (37%) items had mean scores >5 related to novelty/innovation, with "Boot Camp Translation "(Mean 5.45), "Ripple Effects Mapping" (Mean 5.43), and "Human/User-Centered Design "(Mean 5.42) rated as the most innovative Community Engagement approaches. It should be noted, however, that even though Boot Camp Translation and Ripple Effects Mapping were among the items with the highest mean scores, only 25% of the sample provided ratings on these items due to their relative lack of familiarity among HV researchers.

Ten of the 19 (53%) items had mean scores >5 related to whether HARC should develop resources for HV related to the item, with "Research approaches or paradigms to engage home visitors, supervisors, families, and other key stakeholders in conducting a research project" (Mean 6.16), "Community partners as collaborators and research team members" (Mean 5.82), and "Researcher participation in community meetings to share findings and learn questions important to the field" (Mean 5.7) rated as the highest priorities for resource development.

Six of the 19 (32%) items had mean scores >5 on both novelty/innovation and HARC resource prioritization: (A) Community partners as collaborators and research team members, (B) Researcher participation in community meetings to share findings and learn questions important to the field, (C) Human/User-Centered Design, (D) Ripple Effects Mapping, (E) Data walks, and (F) Boot camp translation (Figure 2).

Figure 2. Delphi Prioritization Results: Community Engagement Approaches with Highest Means Across Innovation and HARC Priorities
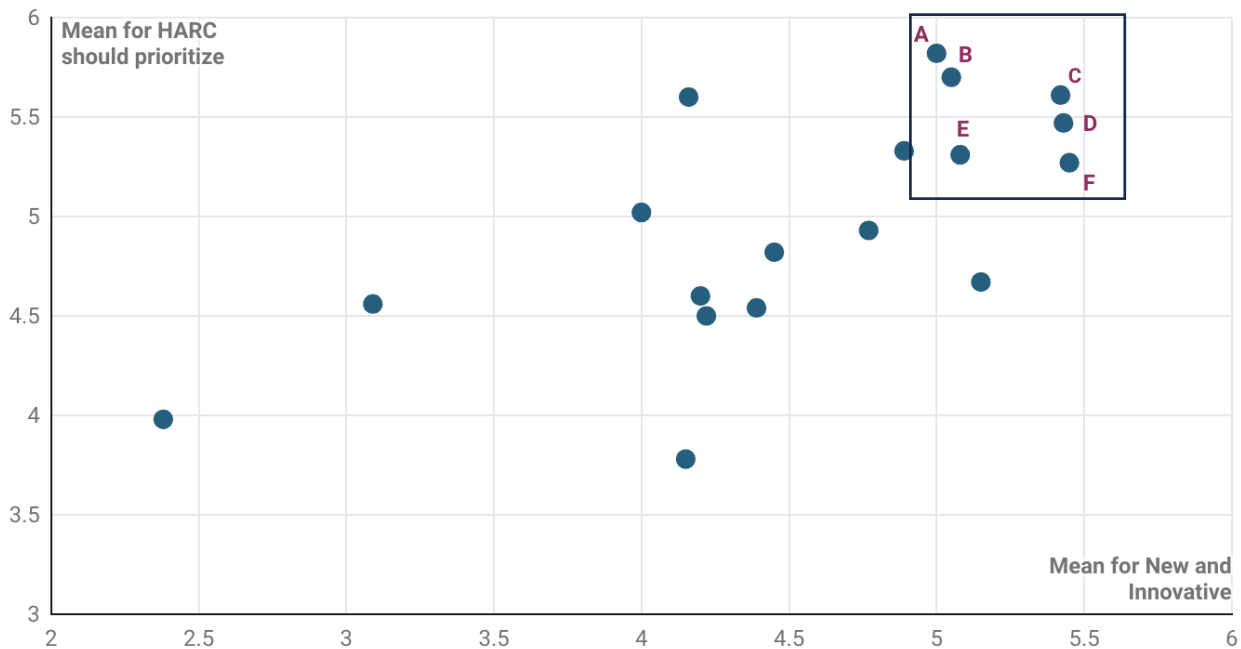
A - Community partners as collaborators and research team members; B - Researcher participation in community-level meetings; C - Human/user centered design; D - Ripple Effects Mapping; E - Data Walks; F - Boot Camp Translation

Implementation Science (Figure 3)

Nineteen items emerged from the first Delphi survey for the Implementation Science domain. On the second survey, two of the 19 (11%) items had mean scores >5 related to novelty/innovation, with "Machine Learning" (Mean 5.52) and "Rapid Turnaround Qualitative Analysis" (Mean 5.03) rated as the most innovative Implementation Science methods.

Ten of the 19 (53%) items had mean scores >5 related to whether HARC should develop resources for HV related to the item, with "Methods to Support Intervention/Program Adaptation" (Mean 5.89), "Methods to Support Intervention/Program Sustainment" (Mean 5.84), and "Methods to Promote Intervention Scaling" (Mean 5.75) rated as the highest priorities for resource development.

There were no items, however, that received mean ratings >5 on both innovation and being a priority for resource development.

Figure 3. Delphi Prioritization Results: Implementation Science Methods/Approaches with Highest Means Across Innovation and HARC Priorities
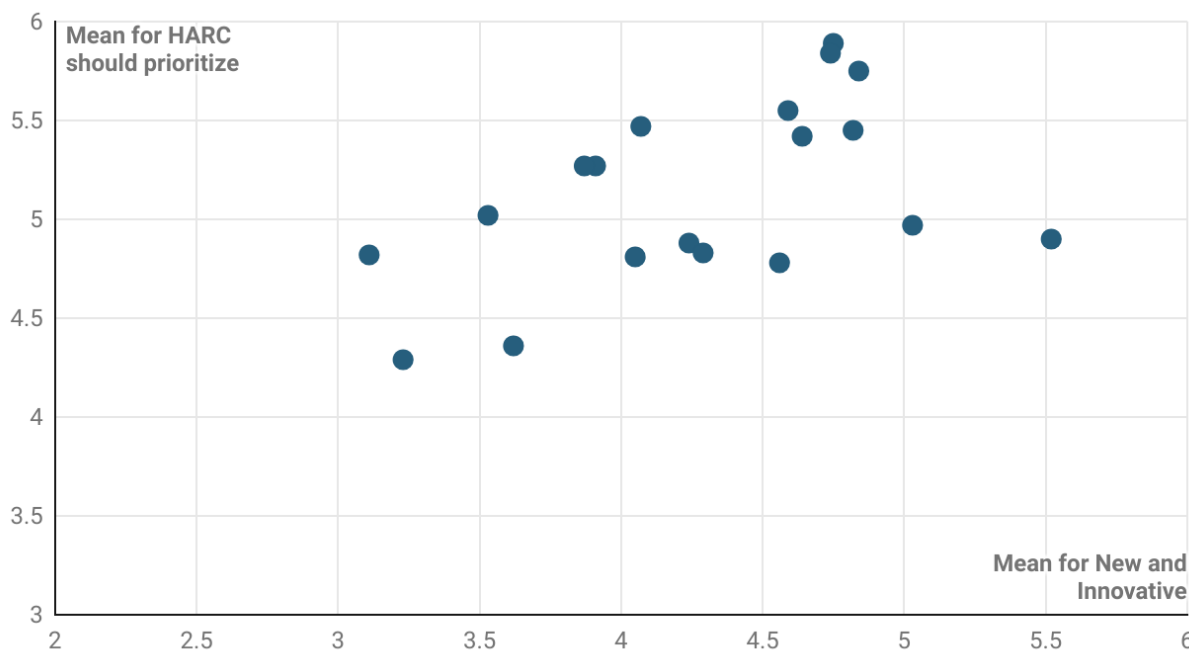

Research Design (Figure 4)

Thirty-five items emerged from the first Delphi survey for Research Design. On the second survey, five of the 35 (14%) items had mean scores >5 related to novelty/innovation, with "Adaptive Trials "(Mean 5.33), "Factorial Designs/Experiments" (Mean 5.29), "Predictive Modeling" (Mean 5.19), "Systems-Level Evaluations" (Mean 5.16), and "Hybrid Effectiveness-Implementation Trials (Mean 5.04) rated as the most innovative Research Design considerations/approaches.

Thirteen of the 35 (37%) items had mean scores >5 related to whether HARC should develop resources for HV related to the item, with "Real World Effectiveness Designs" (Mean 5.58), "Factorial Designs/Experiments" (Mean 5.54), "Dose-Response Design" (Mean 5.53), and "Hybrid Effectiveness-Implementation Trials" (Mean 5.44) rated as the highest priorities for HARC resource development.

Four of the 35 (11%) items had mean scores >5 on both novelty/innovation <u>and</u> HARC resource prioritization: (A) Hybrid Effectiveness-Implementation Trials, (B) Systems-Level Evaluation, (C) Factorial Designs/Experiments, and (D) Adaptive Trials

Figure 4. Delphi Prioritization Results: Research Design Considerations/Approaches with Highest Means Across Innovation and HARC Priorities
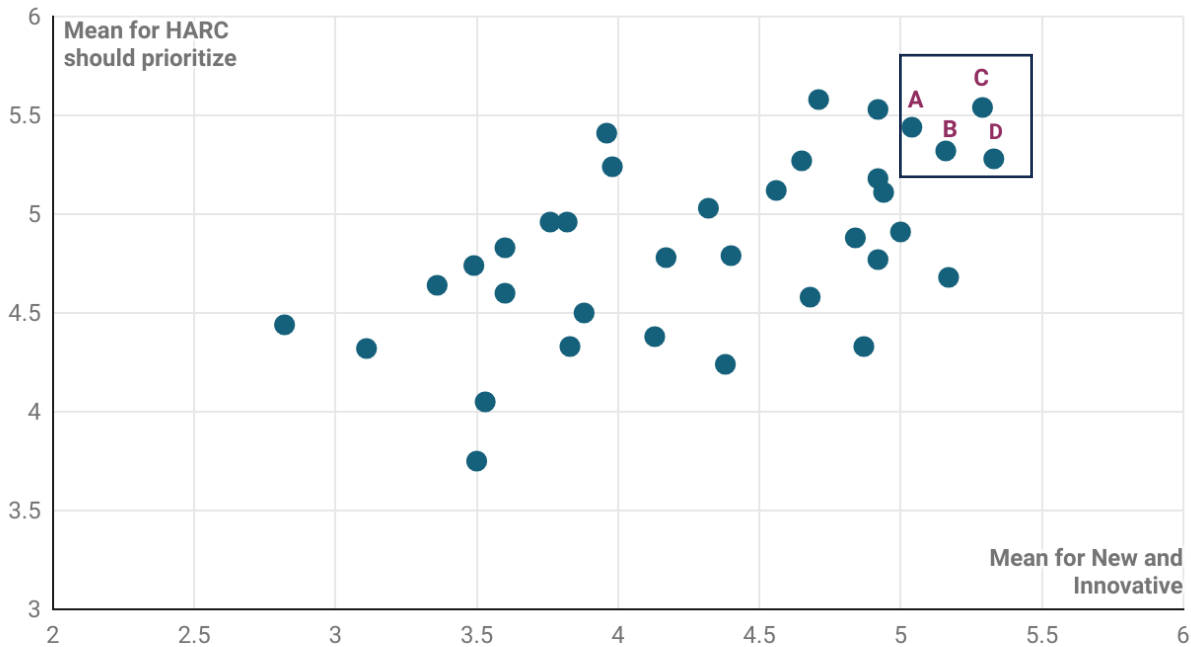
A - Hybrid Effectiveness-Imp. Trials; B - Systems-Level Eval.; C Factorial Designs/Experiments; D - Adaptive Trials

DISCUSSION AND IMPLICATIONS

Summary of Findings

Results from this Delphi Process identified several areas for future HV research deemed to be innovative and priorities for the field of HV in which to develop resources.

Related to Community Engagement, respondents felt that approaches supporting community partners as collaborators and promoting researchers' participation in community meetings to obtain and disseminate data, were both innovative and priorities for resource development. These recommendations mirror growing recognition within maternal and child health[3-4] of the value in engaging community partners throughout the lifespan of a research project. The HV field could look to national networks that support community-engaged research (e.g., National Institute of Health's Clinical and Translational Science Award (CTSA) program; American Public Health Association's Community-Based Public Health Caucus), funders (e.g., Patient-Centered Outcomes Research Institute), and a growing number of investigators conducting community-engaged research, to identify resources and developing and/or amplifying their appropriateness for HV research. In doing so, the HV field should be cognizant of the different types of community partners[5] (e.g., HV managers, state administrators, local program staff, HV families) and various points during a research project[6] (e.g., pre-award, dissemination phase) that partners can be engaged.

Related to Implementation Science, most items were not deemed as novel as those in the Community Engagement or Research Design domains, yet several items were deemed priorities for resource development to

advance HV research. There appears to be great interest in developing resources to support HV scaling and sustainment, as these items were the most highly endorsed for resource development. Additionally, methods to support intervention/program adaptation was highly endorsed, which aligns with the growing recognition that program adaptation can facilitate sustainment by tailoring interventions to meet specific cultural or contextual factors[7]. The field of HV could look to various sources to support these identified priorities, including articles published in a growing number of peer-reviewed journals (e.g., Implementation Science, Implementation Research & Practice), work presented at annual implementation science meetings, and implementation science centers/institutes across the United States. As the field of HV develops resources in this area, attention should be placed on the connection between Implementation Science and Community Engagement, as strategies for promoting the implementation and sustainment of programs/interventions benefit from community engagement[8]. Implementation science also is tightly linked with health equity, as implementation science approaches (including those that engage community partners) can promote access to timely and effective services to improve community health[9].

Related to Research Design, respondents deemed adaptive trials and hybrid effectiveness-implementation trials as highly novel and relevant for resource development. Specifically, both adaptive trial and hybrid trial designs move beyond traditional randomized controlled trials (RCTs). Adaptive trials allow studies to use within-trial adaptations to better understand for whom an intervention benefits, while hybrid designs generate robust data on various implementation domains--including appropriateness and adaptation— that can help promote understanding of how a program/intervention is working. It is important to note that there are many types of adaptive trials[10] (e.g., just-in-time adaptive interventions, micro-randomized trials) as well as three types of hybrid effectiveness-implementation designs (Type 1, 2, & 3),[11] suggesting that potential resource development should include an emphasis on describing the similarities and differences in characteristics across different types of adaptive and hybrid trial designs.

Strengths and Limitations

This project represents, to our knowledge, the first systematic assessment of priorities for HV research methods. We used a research method—Delphi Process—that allowed us to identify and prioritize methods and approaches relevant to HV research from a sizable number of HV researchers in a cost-effective and efficient fashion. Three main limitations should be considered when interpreting these Delphi results. First, findings were generated via the perspectives of HV researchers and not other individuals connected to HV research, including HV managers and staff, home visitors, or state-level HV administrators. HARC leadership shared an overview of these Delphi findings at two meetings—the 2024 All-Grantee Meeting and 2024 HV Summit—and received agreement from these other constituencies (HV managers, home visitors, state administrators) in attendance at these convenings that the methods and approaches identified by researchers were relevant. Additional feedback related to the Community Engagement domain highlighted ensuring community partners' input was not tokenizing and came with resources (e.g., stipends for Advisory Board participation) that acknowledged time spent by community partners, while feedback related to the Implementation Science domain centered on how program/intervention delivery, adaptation, and sustainment are all greatly influenced by the context in which a HV agency operates. Second, we chose not to collect demographic information from Delphi respondents, so we are unable to ascertain whether some methods and approaches varied in perceived novelty and need for resource development based on researcher characteristics (e.g., disciplinary training, number of years in the field). Third, some items included in the second Delphi survey had large numbers of respondents who did not rate them because of limited understanding of the method/approach. This was particularly true in the Implementation Science domain, raising some caution in interpreting results of items with fewer survey responses.

Future Directions

HARC supports the use of precision HV research and evaluation to answer questions related to what type(s) of HV services work best for different types of families in varied contexts, why services are effective, and how they are effective.[12] Each set of Delphi results provides guidance to HARC and the HV community on priority areas in which to develop resources that can support a precision home visiting research paradigm. Community Engagement

methods and approaches can help develop and implement HV services and model enhancements that are co-designed by various HV partners, thereby increasing their likely feasibility, acceptability, and effectiveness. Implementation Science methods and approaches can provide guidance on ways to examine how HV services and enhancements are being delivered and sustained. They can also help support the conduct and assessment of adaptations to enhance HV relevance for diverse families. Finally, a growing number of innovations in Research Design allow HV research to better address questions of for whom HV works, and in what circumstances. For example, certain adaptive trial designs can help ascertain how different levels or dosage of HV content are needed to improve outcomes for individuals who may initially show fewer benefits from the receipt of HV services.

As the field of HV moves forward with developing resources related to Community Engagement, Implementation Science, and Research Design, it is recommended that these resources be co-developed with HV partners beyond researchers. It is also recommended that the field consider what type(s) of resources will be most useful related to emerging priority areas. For example, some resources may be best suited for a White Paper format that provides an overview of a particular implementation science approach or research design, while an interactive webinar featuring different types of HV partners co-presenting may be more appropriate for community engagement strategies. It is also suggested that the HV field consider ways in which ongoing technical assistance or support can be provided to research teams to support their use of these practices. In closing, by amplifying the relevance, and supporting the use, of novel methods and approaches, this brief aims to provide direction to the HV field as it seeks to effectively and rigorously examine the delivery and impact of HV services.

ACKNOWLEDGEMENTS

REFERENCES

1. Duggan, A., Minkovitz, C. S., Chaffin, M., Korfmacher, J., Brooks-Gunn, J., Crowne, S., Filene, J., Gonsalves, K., Landsverk, J., & Harwood, R. (2013). Creating a national home visiting research network. Pediatrics, 132(Supplement_2), S82–S89. https://doi.org/10.1542/peds.2013-1021F
2. RAND Corp. (2021). Delphi Method. Retrieved 20 November 2024, from https://www.rand.org/topics/delphi-method.html
3. World Health Organization (2020). Integrating Stakeholder and Community Engagement in Quality of Care Initiatives for Maternal, Newborn and Child Health. 2020; 52
4. Marston C, Hinton R, Kean S, *et al.*: Community participation for transformative action on women's, children's and adolescents' health. *Bull World Health Organ.* 2016; 94(5): 376–82
5. Concannon, T., Meissner, P., Grunbaum, J., McElwee, N., Guise, J., Conway, P., Daudelin D., Morrato, E., & Leslie, L. (2012). A new taxonomy for stakeholder engagement in patient-centered outcomes research. J Gen Intern Med; 27(8):985-91.
6. Cargo, M., & Mercer, S. (2008). The value and challenges of participatory research: strengthening its practice. Annu Rev Public Health;29:325-50.
7. Chambers D. A., Norton W. E. (2016). The adaptome: Advancing the science of intervention adaptation. American Journal of Preventive Medicine, 51(4 Suppl 2), S124–S131.

8. Meissner P, Cottler LB, Eder M, & Michener, L. (2020). Engagement science: The core of dissemination, implementation, and translational research science. Journal of Clinical and Translational Science; 4: 216–218

9. Ramanadhan S, Alemán R, Bradley CD, Cruz JL, Safaeinili N, Simonds V, & Aveling EL. (2024). Using Participatory Implementation Science to Advance Health Equity. Annu Rev Public Health; May;45(1):47-67.

10. Kaizer AM, Belli HM, Ma Z, Nicklawsky AG, Roberts SC, Wild J, Wogu AF, Xiao M, Sabo RT. Recent innovations in adaptive trial designs: A review of design opportunities in translational research. J Clin Transl Sci. 2023 Apr 28;7(1):e125.

11. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. Med Care. 2012 Mar;50(3):217-26.

Suggested Citation: Tandon, S.D., Daniels, J., O'Neill, K. West, A. (2024). *Establishing Priorities for Home Visiting Research Approaches and Methods.* Home Visiting Applied Research Collaborative. https://hvresearch.org/wp-content/uploads/2025/01/R.-Brief-Establishing-Priorities-for-Home-Visiting-Research-Approaches-and-Methods-2025.pdf.