Advancing the Science and Practice of Equine-assisted Services through Community-Academic Partnerships

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Ambiguity of the incorporation of animals in services that promote health and well-being is often due to inadequate sample sizes and imprecise outcome measures necessary to detect differences in research groups. Researchers are recognizing that to transcend these concerns and truly affect population health, they must partner with communities. This paper describes guiding principles of community-academic partnerships using two different types of equine-assisted services as illustrations. These principles and illustrative examples demonstrate how researchers and communities can work together to advance science and practice.

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A growing body of empirical research has sought to measure the beneficial influence of diverse equine-assisted services on physical and psychosocial health in a range of client populations (Stern & Chur-Hansen, 2019; Wood & Fields, 2019). Yet, much of the scientific evidence for the efficacy of various equine-assisted services remains inconclusive (Stern & Chur-Hansen, 2019). Serpell et al. (2017) attribute the ambiguity of the incorporation of animals in services that promote health and well-being to the inadequate sample sizes and imprecise outcome measures necessary to detect differences in research groups. In addition to these methodological issues, these authors also note that researchers are confronted with "considerable theoretical and practical challenges" that can impede their efforts in establishing favorable findings (p.1). For example, few theories describing the relationship between the unique nature of the human-horse interaction and positive outcomes exist.

Researchers are recognizing that to transcend these concerns and truly affect population health, they must partner with communities. Community-academic partnerships can offer a host of benefits to the research process. Namely, Suarez-Balcazar et al. (2006) assert that these partnerships help create theory that is grounded in social experiences; join together people with diverse skills and knowledge; improve quality and validity of research; enhance relevance and use of findings by all partners; and provide additional funds and possible employment opportunities (p. 633). An Institute of Medicine (1997) report describes a continuum of community-academic research partnerships (see Figure 1). On one end of the continuum is Type 1, or traditional research where the academic is the sole researcher and determines what questions to ask and plausible answers. On the other end of the continuum is Type 3, or participatory research where the community partners and academics jointly determine the questions and how to collect data, and decide how information will likely be disseminated. In the middle of the continuum is Type 2 research where community partners help determine questions, but academics are primarily in charge of determining the research methods and potential answers (Baker et al., 1999).
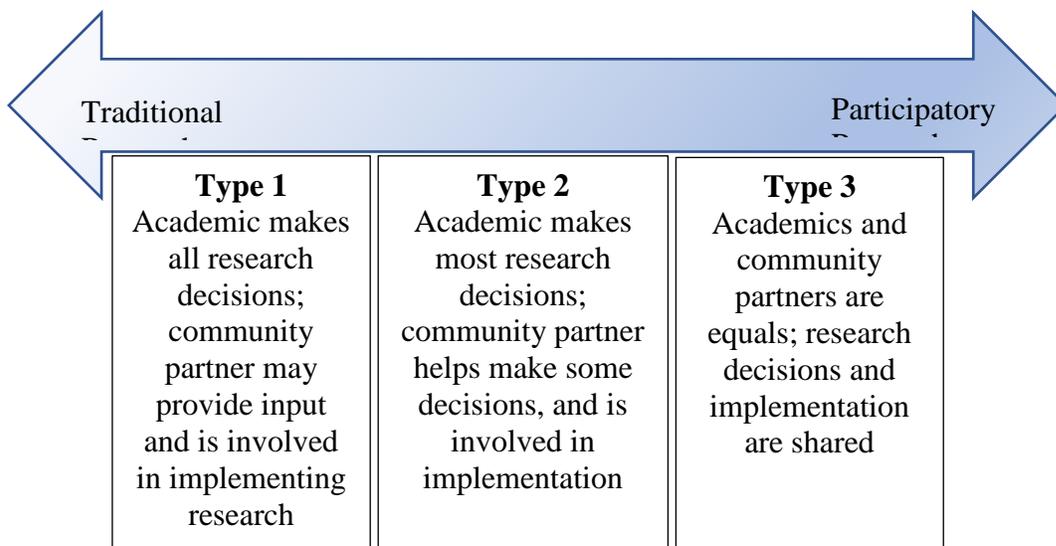

Figure 1. Community-Academic Research Partnership Continuum.

Despite an abundance of notable advantages for use of community-academic research partnerships, less well documented and understood is how these partnerships can advance the scientific development of therapies and activities that incorporate horses to optimize the health of people across the lifespan. Indeed, two comprehensive literature reviews on equine-assisted services found no study that reported using any of these three community-academic partnership approaches to research (Stern & Chur-Hansen, 2019; Wood & Fields, 2019). Therefore, the purpose of this paper is to describe guiding principles of community-academic partnerships for advancing equine-assisted services research. To illustrate the different ways in which academics and community-based providers of equine assisted services can work together, we will describe two different community-academic research partnerships that exemplify two of the three partnership models (i.e., Type 1: Traditional and Type 3: Participatory research). These community-academic partnerships have conducted research on two different types of equine-assisted services: 1) an adaptive riding program for people with dementia and 2) occupational therapy in an equine environment for youth with autism spectrum disorder (ASD).

Dementia

More than 5 million people are living with Alzheimer's disease and experience behavior and psychological issues that can negatively impact their quality of life and their families (Alzheimer's Association, 2020). In 2011, staff at Hearts & Horses Therapeutic Riding Center ('Hearts & Horses'), located in Colorado, designed an adaptive riding program, Riding in the Moment, to enhance the quality of life for people with Alzheimer's disease, dementia, and other forms of memory loss (Hearts & Horses, 2020). Over the course of four to eight weeks, participants are provided a safe, supportive and dynamic environment where they can ride, groom and pet the horses as well as engage with staff, volunteers and other participants in the experiential ranch setting. Riding in the Moment involves at most, eight sessions each year lasting approximately 60 minutes each (for a detailed description of program components, see Lassell et al., 2020). Studies have demonstrated the safety, acceptability, and proof of concept of this program in improving quality of life of adults in the early and moderate stages of dementia (Fields et al., 2018; Fields et al., 2019; Lassell et al., 2021). Given such compelling evidence and need to increase program reach, a research study is examining the adaptation and implementation of the original Riding in the Moment program through two centers that provide equine-assisted services in Wisconsin; BEAMING, Inc., and Three Gaits, Inc. Because the research agenda and methods were jointly determined by an academic and community partners, this study exemplifies participatory research within the community-academic partnership continuum. This study has potential to scale up the Riding in the Moment program and ultimately benefit more people with dementia.

ASD

About one in 54 children have ASD (Maenner et al., 2020), which is characterized by differences in social communication, social interaction, and restricted or repetitive behaviors that often impede social participation (American Psychiatric Association, 2013). Recent reviews have found that specific equine-assisted services such as therapeutic riding and hippotherapy hold promise for improving social and behavioral outcomes in youth with

ASD, but scientific development remains in early stages (McDaniel-Peters & Wood, 2017; Srinivasan et al., 2018). In particular, there is limited research to support and guide occupational therapy services that incorporate horses for youth with ASD. Therefore, a research team at Colorado State University's Temple Grandin Equine Center partnered with the staff of Hearts & Horses to establish a program of research that aimed to develop and evaluate an occupational therapy intervention incorporating horses to address social and behavioral outcomes in youth with ASD.

Because the research agenda and methods of this research program originated in an academic context, it exemplifies traditional research within the community-academic partnership continuum. The research program also followed a framework developed by the National Institutes of Mental Health for how psychosocial interventions for youth with ASD are best empirically developed (Smith et al., 2007). The resulting intervention is named **O**ccupational **T**herapy in an **E**quine **E**nvironment: **H**arnessing **O**ccupation to promote Self-**R**egulation, **S**ocial Communication, and **Pla**y in **Y**outh with Autism (OT[ee] HORSPLAY). OT[ee] HORSPLAY aims to incorporate horses into an occupational therapy intervention in a manner that optimizes best-practices for youth with ASD; the equine environment provides opportunities for teaching social skills in the context of motivating activities that include rich multi-sensory experiences, and natural reinforcement of developing skills. A pilot study demonstrated preliminary efficacy (Peters et al., 2020) and caregiver acceptance (Kalmbach et al.,2020); the research is now focused on protocol and manual development (Peters et al., 2021). The goal of this research is to develop an evidence-based intervention that can be implemented by occupational therapists across the globe who incorporate horses into their services for youth with ASD. We will use the Riding in the Moment and OT[ee] HORSPLAY programs of research to demonstrate guiding principles of community-academic partnerships.

Guiding Principles of Community-Academic Partnerships for Advancing Research

To identify common principles of successful community-academic partnerships for advancing research, we completed a literature review. This type of review captures published materials on a designated subject and does not require comprehensive searching or quality assessment. Rather, the literature is synthesized in a narrative manner to allow for consolidation and to build upon previous work (Grant & Booth, 2009). Five common principles were identified and examined: *identify partnership model, honor different partners' agendas and create a shared commitment, foster an interdisciplinary approach, involve an iterative dialogic process, and use evaluation strategies that are mutually beneficial.*

Identify Partnership Model

This principle represents the rationale and importance for selecting a distinct partnership model (e.g., traditional and participatory research). Historically, academic programs have focused on providing research skills to conduct Type 1 traditional research, where the academic makes all research-related decisions. However, many agencies that fund research have increased their efforts to study and formalize engaged, participatory approaches like Type 3 research. According to Peay et al. (2019) "substantive engagement helps align research activities with the goals, needs, preferences, and values" of target populations, ultimately improving their health outcomes and experiences (para. 1). In turn,

more academic programs have started offering courses focused on providing necessary skills to conduct participatory research such as strategies to increase stakeholder engagement. Given the variability in skills and types of research, it is critical that academics and community partners determine which model is most appropriate to address the nature of the research question or problem. This decision informs the procedures of inquiry and specific methods of data collection, analysis and interpretation.

Example: Riding in the Moment Type 3 Participatory Research Program

The first author (BF), an academic from the University of Wisconsin-Madison, partnered with staff from two Wisconsin centers that offer equine-assisted services, BEAMING, Inc., and Three Gaits, Inc. Together, they jointly identified a need and desire to increase the quality of life of older adults with dementia and their families through community-based programming. BF then contacted a research associate (the fourth author, SM) from the Community Academic Aging Research Network (CAARN) to help launch the participatory research study. The purpose of CAARN is to bring together academic researchers and community partners to conduct clinical and dissemination research related to healthy aging (University of Wisconsin-Madison Institute for Clinical and Translational Research, 2020). SM organized an introductory team meeting so that the academic could share existing evidence on the Riding in the Moment program with not only leadership from BEAMING, Inc., Hearts & Horses, and Three Gaits, Inc., but also with other key stakeholders in health and aging organizations located near the two centers. These key stakeholders included directors and staff from Aging Disability Resource Centers and local senior centers. During this initial meeting, team members realized the potential of Riding in the Moment and started discussing plans for how different research activities could support the goals and needs of the two local Wisconsin communities. In addition to organizing this first introductory team meeting, SM also assembled a 'tailored advisory board' consisting of representatives from aging and healthcare organizations, agencies, and foundations. Throughout the research study, representatives from the board intermittently attended team meetings to offer advice and dynamic perspectives related to the Riding in the Moment program.

Example: OT^{ee} HORSPLAY Type 1 Traditional Research Program

The OT^{ee} HORSPLAY program of research is an example of traditional research that originated in academia. As a Ph.D. student, the second author (CP), conducted a review of research related to equine-assisted services for youth with ASD and found that, despite the prevalence in practice, there was little research to guide occupational therapists who incorporate horses into their services for youth with ASD (McDaniel-Peters & Wood, 2017). To address this problem, she sought to establish a program of research investigating occupational therapy in an equine environment to promote social and behavioral outcomes in youth with ASD. She approached Hearts & Horses to assess their interest in such a research study, and was met with enthusiasm. The community-academic partnership focused on OT^{ee} HORSPLAY was established in 2017 and is about to begin a third research study together. CP has led the team by writing grants to fund the research, leading data collection and analysis, and disseminating results. Staff and occupational therapists at Hearts & Horses have played key roles in defining critical elements of OT^{ee} HORSPLAY, recruiting participants, and providing the intervention. CP has repeatedly sought input from

stakeholders at Hearts & Horses, but has ultimately been the responsible party for making research decisions.

Honor Different Partners' Agendas and Create a Shared Commitment

By nature, community-academic partnerships bring together two or more organizations that have different missions and values, and therefore may have different "agendas" for their involvement in the partnership (Baker et al., 1999). Generally, programs that provide various equine-assisted services are held accountable to provide high-quality services to the community, and therefore may value increased training, resources, and program or intervention activities. In contrast, academics are held accountable to funding agencies and tenure and promotion committees, and therefore may value grants, publications, and improved teaching (Lindamer et al., 2009). Each partner must articulate their priorities, honor the priorities of others, and find mutually beneficial compromises, if necessary. Acknowledging these different agendas, it is also vital for partners to create a shared commitment to the study; often, both partners have a shared commitment to advance knowledge, demonstrate outcomes, and improve community health and well-being. Shared commitment to the research study goals may occur at different time points depending on the partnership model. In traditional research, the study aims are often established prior to the initiation of the partnership, in which case, the academic must ensure that the study aims are also valuable to the community partner. In participatory research, the academic and community partner jointly determine research aims, creating a shared commitment to the study from the outset.

Example: Riding in the Moment Type 3 Participatory Research Program

As described earlier, team members participated in an introductory meeting to not only establish a partnership model, but discuss differing agendas and commitment. At the start of the meeting, each member shared more about their position and background and areas of expertise. These introductions helped the team establish rapport and get to know what each other's agendas may be before proceeding with a participatory research study on the adaptation and implementation of Riding in the Moment. At the time of the meeting, BF had started a tenure-track faculty position and thus, shared that she was most interested in building her program of research. Besides seeking to obtain grant funding for the research study, she also expressed interest in increasing her stakeholder engagement skills, building relationships with her local community, and developing manuscripts for consideration for publication. On the other hand, the community partners including staff and volunteers from BEAMING, Inc., Three Gaits Inc., the Aging Disability Resource Center, and the local senior center expressed interest in expanding their existing programs to include more age-friendly or community-based activities. Many community partners also acknowledged the importance of enhancing their own skills through access to dementia care and human-animal interaction and safety trainings. By the end of the meeting, all team members' perspectives united around a shared commitment—to improve the quality of life of older adults with dementia and their families through adapting and implementing Riding in the Moment in Wisconsin.

Example: OT^{ee} HORSPLAY Type 1 Traditional Research Program

As discussed above, CP decided on the aim of the OTᵉᵉ HORSPLAY study, and approached administrators and providers from Hearts & Horses to assess their interest in partnering on the research study. These individuals had previous experience with research studies, and valued research. Furthermore, occupational therapy services to youth with ASD had been offered at Hearts & Horses for some time. Altogether, therefore, much of the staff and expertise needed to launch this program of research already existed at Hearts & Horses. Ultimately, our eventual community partners at Hearts & Horses expressed enthusiasm for the partnership, and all parties agreed on a shared commitment to developing and evaluating occupational therapy in an equine environment for youth with ASD.

Hearts & Horses' mission is to "promote the physical, cognitive, emotional and social well-being of people with special needs through equine-assisted activities and therapies" (Hearts & Horses, 2020). Hearts & Horses is a leader in the industry of equine-assisted services, and is held accountable to provide high quality services to the community. The center has premiere accreditation from the Professional Association of Therapeutic Horsemanship, International (PATH, Intl), and therefore must also abide by all PATH, Intl safety standards (PATH Intl, 2017). The Temple Grandin Equine Center at Colorado State University is committed to integrating education and research in equine-assisted services (Temple Grandin Equine Center, 2020). The OTᵉᵉ HORSPLAY study has provided opportunities for several Undergraduate, Master's, and Ph.D. students to complete theses and dissertations, therefore providing learning opportunities for students. As a result, some aspects of the research study have complied with academic timeframes to allow students to graduate on time. Furthermore, CP is the principal investigator of the OTᵉᵉ HORSPLAY research and is currently a post-doctoral fellow held accountable to conducting high-quality research, as evidenced by obtaining funding and publishing manuscripts. Finally, the OTᵉᵉ HORSPLAY program of research has had several funding sources (Carl and Caroline Swanson Foundation, 2021; Horses and Humans Research Foundation, 2021; Human-animal Bond in Colorado, 2021), so the research studies are often held accountable to funding agency expectations and timelines.

All partners work hard to honor each other's priorities, making compromises when different priorities compete with one another. For example, at Hearts & Horses, services are typically provided in 8-week sessions, with 2-week breaks after the session to allow staff and horses much-needed time off. However, to maintain a high-quality research design, it was critical that OTᵉᵉ HORSPLAY was provided for 10 continuous weeks. Therefore, staff at Hearts & Horses re-arranged their typical session schedule to accommodate the research design. As another example, the most coveted timeslots for community members to participate in equine-assisted services are after-school times, so that youth do not have to miss school. Therefore, the research was scheduled to occur during morning times, even though those times are less convenient for research participants, so that Hearts & Horses could continue giving the most valued time-slots to the community members they serve. The ability of each partner to articulate their needs, honor each other's priorities, and problem solve, has been essential to the success of the OTᵉᵉ HORSPLAY research program.

Foster an Interdisciplinary Approach

The strength of community-academic partnerships lies in their interdisciplinary nature. Community members often have knowledge of community needs and expertise in program or intervention delivery, while academics bring specialized knowledge in research methods and evidence-based practices. Community-academic partnerships benefit when each partners' unique strengths are valued, which may require partners to "broaden their perspectives, and see skills other than their own as complementary rather than competitive" (Baker et al., 1999, p. 90). The full potential of an interdisciplinary team may not be fully realized until the partners know one another, and their unique skillsets, well. Therefore, fostering an interdisciplinary approach requires investing time and effort into establishing relationships based on mutual respect.

Example: Riding in the Moment Type 3 Participatory Research Program

The study team included individuals with training in participatory and community-engaged research designs, qualitative and quantitative research analysis, education, equine-services, health and aging, community organizing, dementia care, occupational therapy, and social work. These individuals brought unique skills and approaches to the study. For example, BF presented ways to increase reliability and dependability of the study; SM from CAARN provided considerations for building community-academic partnerships and sustaining and growing the Riding in the Moment program; the directors at Hearts & Horses, BEAMING Inc., and Three Gaits, Inc. offered information on their existing programming and business model, equine-industry safety standards, and training requirements; the graduate student research assistant applied data collection, analysis, and study management skills; and the directors from health and aging organizations supplied information on how best to recruit and engage older adults with dementia and their families, as well as the community as a whole in the Riding in the Moment program. Over the course of four months, these team members helped develop and refine implementation and curriculum manuals for the Riding in the Moment program. These manuals are critical to the long-term success and sustainability of the Riding in the Moment program because they outline step-by-step processes and activities to be used by centers and other partner sites that offer equine-assisted services (Sullivan et al., 2001). In particular, the manuals can help individuals understand what the Riding in the Moment program is designed to do, what steps are required to design and implement the program, and what measures can be used to evaluate whether the program has improved established goals. Each team member contributed their diverse skills and perspectives to the development of these manuals.

Example: OT[ee] HORSPLAY Type 1 Traditional Research Program

The OT[ee] HORSPLAY team is comprised of several professionals with distinct skillsets. The principal investigator, CP, is a post-doctoral fellow with her Ph.D. in occupation and rehabilitation science. The associate executive director of Hearts & Horses (third author, TM) has acted as the site coordinator; she is a certified therapeutic riding instructor and equine specialist in mental health and learning. The occupational therapists that deliver the intervention have training from the American Hippotherapy Association, and years of experience providing occupational therapy in an equine environment to youth with ASD. Several other employees at Colorado State University have provided consultation throughout the research study, including occupational therapists, a licensed

clinical psychologist, a statistician, equine scientists, and a veterinarian. Defining roles clearly at the beginning of each study has fostered success; each partners' role has been consistent with a traditional research partnership, where the academic oversees all research decisions and the community partner provides valuable input and implements the intervention. As principal investigator, CP has been responsible for obtaining funding, determining research methods, overseeing data collection and analysis, and disseminating results. The site coordinator communicates with the Hearts & Horses team, and manages all on-site elements such as horse selection, arena space, volunteers, and scheduling. The occupational therapists provide their clinical expertise to inform intervention development, conduct occupational therapy evaluations, and provide the intervention. Each team members' unique skillset is valued. Several formal and informal processes, described in the next principle, have helped to foster relationships based on mutual respect to ensure all perspectives are heard.

Involve an Iterative Dialogic Process

This principle illustrates differing dialogical processes among academic and community partners. Dialog is commonly centered on problem definition; development of research methodology; evaluation or outcome selection; data collection, analysis, and interpretation; dissemination of results; and plans for next steps (Israel et al., 1998). Thus, dialog occurs and re-occurs throughout the research process, continually informing next steps. The amount of exchange of information among partners reflects the type of partnership model previously selected. For example, in participatory research dialog is more iterative and involved than traditional research. Nonetheless, academics and community partners can employ similar strategies for generating and facilitating discussion, or information for their studies. These strategies include but are not limited to listening sessions, focus groups, team meetings, surveys and interviews.

Example: Riding in the Moment Type 3 Participatory Research Program

The participatory study team has moved through various research stages, together. As described earlier, the team was formulated with an introductory meeting. After rapport and agendas were established, the team decided to submit a grant proposal to the Human Animal Bond Research Institute. The proposal was focused on understanding the implementation of piloting the Riding in the Moment program at BEAMING Inc. and Three Gaits Inc. Study team members worked together to formulate the study objectives, data collection and analysis methods, and plans for funding. To strengthen the grant proposal, community partners completed letters of support for the study. Unfortunately, the grant proposal did not receive funding. This news brought the team back together to discuss next steps for moving the Riding in the Moment program forward. To help strengthen a future grant submission to the Eunice Kennedy Shriver National Institute of Child Health and Human Development's R21 Exploratory/Developmental Research Grant (PAR-20-033), the team decided to jointly collect some preliminary data and develop program manuals and a manuscript. These actions help demonstrate a prior history of a positive working relationship among the community-academic partnership.

BF conducted interviews and focus groups with all study team members (i.e., administrators and staff at centers that offer equine-assisted services and aging centers) to learn specific suggestions and considerations for adapting and implementing the Riding in

the Moment program in Wisconsin. The interviews and focus groups were conducted in a semi-structured manner that allowed for new ideas or questions to be brought up. The graduate student research assistant helped BF transcribe and analyze these data. The team then went through a member checking process. Here, preliminary findings were presented to the entire team during a focus group to increase the authenticity of the work (Creswell, 2013). Every team member reflected on and interpreted the meaning of the findings. Information gleaned from the interviews and focus groups was used to create the curriculum and implementation manuals for the Riding in the Moment program. BF initiated a team meeting to review the manuals so that every team member could contribute last thoughts. Lastly, the team decided to describe the nuts and bolts of their community-academic partnership in the form of a manuscript. BF took the lead on developing the manuscript outline and first draft, with frequent email contact with team members to learn their perspective on content, organization, and format. Authorship and acknowledgement of team members for the manuscript were based on contribution to the study and writing process. Prior to submission to a peer-reviewed journal for consideration for publication, BF referred all team members to the International Committee of Medical Journal Editors authorship guidelines (Guidelines can be found here: http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html). Altogether, this iterative process helps ensure that the research work will be used locally and that all team members are accountable for all aspects of the work (International Committee of Medical Journal Editors, 2020; Suarez-Balcazar et al., 2006).

Example: OT^ee HORSPLAY Type 1 Traditional Research Program

Several mechanisms have facilitated dialog and information sharing throughout the OT^ee HORSPLAY research program. At the outset of each new study, partners meet with one another to discuss the aims and methods of the study. Then, throughout the study, there are several formal mechanisms to capture stakeholders' perspectives; the purpose of the dialog and information sharing has evolved throughout each stage of the research program. In the first study, occupational therapists participated in extensive interviewing in order to elucidate the critical elements of the intervention. Once a first draft of the intervention manual was developed, a focus group with key stakeholders captured collective feedback on the manual, which led to several revisions and improvements. In the second study, occupational therapists completed surveys and participated in focus groups focused on the feasibility and acceptability of the newly manualized OT^ee HORSPLAY intervention. In the third study, key stakeholders will once again complete surveys and participate in focus groups. Feedback from these interviews, surveys, and focus groups informs revisions to the intervention manual, and guides next research steps (Smith et al., 2007). These formal mechanisms of information sharing are always funded, so that all partners are paid for their time and expertise. At the conclusion of each study, the principal investigator presents results to all stakeholders at Hearts & Horses, and shares manuscripts as they are published.

Use Evaluation Strategies that are Mutually Beneficial

This principle signifies that evaluation should be consistent with characteristics of the community-academic partnership. In addition to selecting evaluation strategies that will best answer the research questions, academics and community partners should also think

about their roles, responsibilities, and expectations in "identifying an evaluation approach and tools; analyzing the results; and disseminating and utilizing information" (Baker et al., 1999, p. 90). For example, academics may be interested in capturing specific participant health outcomes as a result of the program or intervention, whereas the community partner may be more interested in gathering structural or process level information (Agency for Healthcare Research and Quality, 2015) like the amount of time required to implement the program or intervention, or the ratio of providers to participants. Academics frequently use findings to inform subsequent grant proposals and develop manuscripts and professional presentations. On the other hand, community partners often use findings to help communicate the relevance and impact of a program or intervention on a community and bolster sustainability efforts (Koné et al., 2000). Regardless of the intended evaluation purpose and outcome, academics and community partners must refer back to the defining qualities of the partnership model to determine the overall use of evaluation strategies.

Example: Riding in the Moment Type 3 Participatory Research Program

The two broad goals of the participatory study were to explore adaptation and implementation considerations and to establish and maintain a community-academic partnership for a future pilot study of the Riding in the Moment program in Wisconsin. Therefore, the evaluation strategies addressed the research questions and the partnership itself.

Information from the interviews and focus groups answered the following two research questions: 1) What adaptations need to be made, if any, to the Riding in the Moment program in order to implement it at BEAMING Inc. and Three Gaits Inc. in Wisconsin?, and 2) What factors, if any, impact the implementation of Riding in the Moment at BEAMING Inc. and Three Gaits Inc. in Wisconsin? Constructs of the RE-AIM Framework, an evaluation model, guided discussions during study team meetings, interviews, and focus groups (Glasgow et al., 1999). This multidimensional framework allowed the team to think about the **R**each, **E**ffectiveness, **A**doption, **I**mplementation, and **M**aintenance (RE-AIM) of the Riding in the Moment program. For example, all team members provided insight on what measures to use to assess the impact of the program on participant and organizational and partnership outcomes, commonly known as effectiveness. Several team members suggested the Activity and Affect Indicators of Quality of Life (Albert et al., 1996) to assess the influence of the Riding in the Moment program on participant outcomes; and the Checklist to Assess Organizational Readiness (CARI) (Barwick, 2020) to capture the effect of the participatory research study process on organizational and partnership outcomes. Including all team members in the decision-making around what measures to use, for example, increases the success of the Riding in the Moment program; streamlines data collection and documentation procedures; and informs strategic planning (Sullivan et al., 2001).

Example: OT^ee HORSPLAY Type 1 Traditional Research Program

Evaluation strategies implemented throughout the OT^ee HORSPLAY research have evolved with each study, and were guided by Smith et al.'s (2007) framework for how psychosocial interventions for individuals with ASD are best empirically developed. Following this framework, the first study focused on intervention development; therefore, interviews with occupational therapists helped to elucidate the intervention's critical

elements. All partners also provided input about what types of outcomes are typically seen in clients with ASD, which informed the principal investigator's selection of outcome measures with strong psychometric properties. For example, occupational therapists expressed that intervention goals and outcomes were highly individualized to participants' needs; therefore, goal attainment scaling was selected as the primary measure of efficacy, due to its idiographic approach (Ruble et al., 2012). The second study focused on feasibility, acceptability, and preliminary efficacy. Therefore, in addition to the measures selected to assess the intervention's efficacy, evaluation strategies also included measures of satisfaction and feasibility indicators (e.g., attendance, attrition, safety incidents, assessment completion, intervention fidelity). These evaluation strategies ensured the intervention is feasible to implement and acceptable to both therapists and parents. While the principal investigator oversees all data analysis, results are shared with Hearts & Horses to be used locally.

Conclusion

The insights and experiences of the two different community-academic partnerships are essential in advancing the science of therapies and activities that incorporate horses to optimize the health of people across the lifespan. Common principles and illustrative examples of these community-academic partnerships were discussed to demonstrate how researchers and communities can work together to advance science and practice. Benefits of these partnerships included creating an evidence-based program that can be replicated at other sites, identifying strengths of a program to help target specific funding sources, and generating knowledge and resources to improve outcomes of the program participants. Despite community-academic partnerships' increasing popularity in many fields of study, research on various equine-assisted services infrequently reports use of this approach. Further research in this area is thus warranted to broaden and deepen our understanding of partnerships and how they can positively affect or contribute to the communities and academic institutions involved.

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