

A Horse, an App, and a Heart Full of Purpose

How a skater from India ended up in a Wisconsin barn with horses, technology, and a passion to make a difference



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My goal in writing this article is simple: connection. Science communication for me means turning discoveries from labs and lived experience into stories that truly resonate. This is especially true when they are about children, parents, caregivers, and communities too often overlooked in health innovation. So, this article is rightfully their story as much as it is mine; and it only comes to life because of readers like you who want to engage and champions like Professor Bassam Shakhashiri, Elizabeth Reynolds, and Cayce Osborne who make space for research and storytelling to meet. Thank you for being here. Let me show you where it all begins.

If you had told my 16-year-old self — racing across an ice rink in India as part of the national short-track speed skating team — that one day I'd be standing in a horse barn in rural Wisconsin, helping autistic children and older adults with dementia, I would've chuckled you off the rink.

But life has a strange way of steering us, in an unexpected rhythm, it nudges us forward. Sometimes, it gallops. Often toward places we never expected, but somehow always needed to be.

Today, I'm a life course scientist, a postdoctoral researcher, soon-to-be teacher/educator, and someone who believes that healing doesn't always come from a pill or a clinic. Sometimes, it comes from the steady sway of a horse's back and the twinkle in a child's eye when they shout, "Walk on", and their thousand-pound friend trots ahead.

This is the story of how I found myself working at the intersection of movement science, digital health, and something many associate more with cowboys than clinics: therapeutic horseback riding. It's also the story of how I turned a deeply personal memory into a research project, then into an app—and now, into a vision for changing how we think about therapy, inclusion, and healing.

Growing Up in Motion

I was born in Mysore, a city in southern India known for its palaces, culture, and coconut trees, not exactly the ice-skating capital of the world. But from a young age, I was always moving. I started on roller skates and eventually found my way to ice. Skating gave me discipline, balance,

and a deep appreciation for the body's power and precision. It also gave me my first glimpse into the magic of movement.

Still, I never imagined that one day I'd trade my skates for stirrups.

Like many children raised in ambitious households, I pursued engineering, electrical and electronics, to be exact. I studied circuits, wires, and resistors, but my heart wasn't in it. I had the skills, but not the spark. What I didn't know yet was that my love for structure and design would one day help me build not machines, but systems for human connection and healing.

A Seed Planted Long Ago

The real shift began years earlier, when I was a teenage horseback rider peering through the fence of a riding stable in Mysore. Inside, I'd watch children with cerebral palsy sit atop horses, their faces lit up with joy and focus. They'd arrive in wheelchairs, hesitant, quiet. Eight weeks later, many were sitting taller, smiling more, and some even walking better.

I didn't have the words for it back then. But something inside me understood that this wasn't just horseback riding. It was a transformation.

That image stayed with me through my engineering studies, my skating career, and a graduate sports management program at Seoul National University. When I came to the University of Wisconsin-Madison for my PhD in Kinesiology, that memory returned in full force when I started volunteering at Three Gaits, a therapeutic riding center in Wisconsin. It wasn't just the scent of hay or the rhythmic clop of hooves -- it was what I saw in the children's faces. Confidence. Calm. Connection.

It wasn't long until that nostalgia turned into a question: *What if horses could do more than inspire smiles? What if they could be part of real, rigorous, science-backed therapy?* I wanted to understand how the human-animal interaction bond impacts lives-- especially for those often left out of the conversation: individuals aging with and into disabilities.

Why Horses?

A horse might not seem like a therapist, but in many ways, they're the perfect ones. It might sound surprising -- horses, autism, therapy --? But the connection is both powerful and scientifically grounded.

Horses move in rhythmic, three-dimensional patterns that closely mimic the natural motion of human walking. This means that when an autistic child rides a horse, their body responds to the gentle, repetitive movement, thus engaging muscles used for balance, coordination, and core strength. Without even realizing it, the child is practicing movement skills that can be hard to teach in a traditional therapy setting.

But the magic isn't just physical.

Horses also offer something deeply emotional: connection. They don't talk over you. They don't judge or rush. They simply wait and respond. Their calm presence creates a unique kind of communication, one rooted in trust and energy. That's where magic happens, especially for children who struggle with speech or emotional regulation.

A parent whose child was partaking in the therapeutic riding sessions once shared with me, *"He [my child] seems to have some type of connection with the horses... it's incredible to be able to steer such a massive animal."* Another parent added, *"He's always calm afterward. He's in a whole different mental space."*

Imagine a child who rarely speaks finally saying, "Walk on", and the horse moves! That's not just therapy. That's transformation. That's power!! As one certified therapeutic riding instructor shared, *"The horse won't budge until the child says, 'walk on.' That motivation? You can't teach that in a classroom."*

At Three Gaits, the therapeutic riding center where I first started as a volunteer and then eventually conducted my research, I watched moments like this unfold every week.

Oh, the joy....! Kids played *Red Light, Green Light* while riding, silently giggling with every start and stop. But these games weren't just fun, they were therapy in disguise. Each command, each movement helped build attention, control, and communication skills.

"Green light!" the instructor would call, and the child would command the horse, "walk on," and nudge the horse forward. "Red light!" and the child would say "Whoa", prompting the horse to stop. Underneath the play was something profound: improved focus, balance, and sensory processing.

One child even used his speech device for the very first time, not at home, not in school, not in a clinic, but during the riding sessions. He had to say "Walk on" to move the horse. The horse didn't ask for words; it required them. And the child found his voice to meet that challenge. As another parent told me, *"She [the child] just thrives on it—meeting new people, watching others ride. She's got to talk to everyone."*

That's why horses!! Because therapy isn't always about talking. Sometimes, it's about listening, feeling, and riding your way back to connection.

"What About the Rest of the Week?"

Imagine the joy of horseback riding, the rhythm, the freedom, the connection. Now imagine only feeling that magic once a week. Wouldn't you want to hold onto that feeling a little longer, a little more often?

That's the reality for many autistic children in therapeutic horseback riding programs. Sessions are powerful, but they're also expensive, time-limited, and often capped once a week. And while the horses help build communication skills, emotional regulation, coordination, and confidence, those gains can fade without regular practice.

Now that left me with the same question again and again: *What about the rest of the week? How can we keep this going at home?*

As I dug into the research, I discovered something surprising. Although there were dozens of studies showing the benefits of equine-assisted services such as therapeutic horseback riding, none included parents as active partners in the process.

That didn't sit right with me. Because if anyone knows how to support an autistic child -- day in and day out, it's not the researchers or even the therapists -- it's the parents and caregivers. The ones waiting in the car. Cheering from the sidelines. Managing meltdowns and celebrating small victories, every single day!!

So, I decided to focus my dissertation on closing that gap, the one between the barn and the home.

And my idea was both simple and ambitious:
What if we could put the spirit of the barn into parents' pockets?
What if we could build an app?

Designing with Families, Not Just for Them

When I first began my research, I knew one thing for sure: I didn't want it to end up as just another dissertation collecting digital dust on a university server.

I wanted it to live. Not just in academic journals, but in living rooms, on nightstands, in backpacks. I wanted something that families could *hold in their hands*. A tool that could stretch the magic of therapeutic horseback riding from a once-a-week session into something that could live with them every day.

And I didn't just want to build it *for* the community. I wanted to build it *with* them.

So, to design the app, I followed a simple idea: *listen first, build second, test last*.

I started by sitting down with the people who knew the most about the children and therapeutic horseback riding— parents and riding instructors. I listened to their stories, their frustrations, their hopes. What did they need? What could help their children continue learning and growing even after the riding session ended?

That became the first phase of my research, that is, the **Qualitative Phase** consisted of deep conversations and careful note-taking. Their insights helped me shape what the app would look like, what kinds of games it should include, and how it should feel - welcoming, fun, and useful.

Once I understood their needs, I began building the app. This was the second phase, aka the **Development Phase**. It was like putting together a puzzle, piece by piece, based on everything I had learned. I tested the early versions, made changes, and refined the features until it really felt like a tool that belonged to the families.

Finally, in the third phase, aka the **Quantitative Phase**, I asked parents to try the app and share their feedback. They told me what worked, what could be better, and how it helped them support their kids.

When designing this study, I took a practical, real-world approach. In research terms, it's called a *pragmatic framework*, which simply means I believe that to truly understand how something works in people's lives, you often need to use more than one method. So, I combined both interviews (to hear people's stories) and surveys (to measure patterns) to get a fuller picture.

To guide the work, I used a theoretical framework called the Technology Acceptance Model, or TAM for short. It's a well-known framework that helps researchers understand *why* people choose to use (or not use) new technology. According to TAM, two big factors influence whether someone adopts a new tool:

1. Usefulness – Does it help me in my everyday life?
2. Ease of use – Is it simple enough that I'll actually use it?

These ideas shaped every part of my study. They helped me decide what to ask parents during interviews, what to measure in surveys, and how to design the app itself. TAM kept me grounded in what really matters, making something that families not only *can* use, but *want* to use.

At the end of the day, this wasn't just about building an app. It was about understanding people's needs, their habits, their hopes, and designing something meaningful in response.

Now, allow me to walk you through how it all came together, step by step in each of the three phases:

➤ **Qualitative Phase: Listen first, Build next**

From the deep conversations and interviews with the parents and riding instructors, four powerful themes emerged. These insights guided every line of code, every image, and every design choice within the app.

1. Love for Horses

Literally, every parent I spoke to lit up when talking about how deeply their child is connected with the horse.

"He seems to have some type of connection with the horses," Noah (parent) told me, his voice soft with awe. *"It's incredible to be able to steer such a massive animal."*

Mario, another parent, echoed the same feeling. *"That's part of the reason he wants to come back every week—the horse. He feels very connected to the horse."*

It was clear that the horse wasn't just part of the therapy -- it *was* the therapy. That bond between child and animal wasn't something I could ignore. It needed to be honored and preserved, inside the barn and beyond it.

2. Bringing the Barn Home

Families weren't asking for a replacement for riding sessions; they were asking for a way to keep the rhythm going once the session was over.

"Maybe include a cartoon horse and rider," Jessica (parent) suggested. "Some fun facts, something familiar. Bring in what they love about the riding sessions—tie it all together."

Instructors backed her up. *"A game where you put the helmet on," Jazmyn (riding instructor) offered, "Or pretend to groom the horse, like we do in lessons."*

Rose (riding instructor) added, *"Even small exercises we do on horseback—some kids don't feel comfortable touching the horse or moving in a certain way. If we can practice those movements at home first, it might help."*

So, I planned to design the app with those exact elements. Interactive games. Horse-themed tasks. Mini challenges that mirrored what kids were already doing at the barn, only now, they could do it from their living room.

3. Seeing is Believing: Visuals and Verbal Cues

Many autistic children are visual learners. Parents and instructors said it again and again—*make it visual*.

Jessica (parent) put it perfectly: *"The visual connection helps them really understand. Show it. Don't just say it."*

So, I filled the app with short videos, step-by-step picture guides, and diagrams. Each activity included both images and easy-to-follow verbal cues—modeled directly off the commands and language used at the riding center.

Lily (riding instructor) described it as a kind of *"interactive social story"*—where kids could make choices, practice regulation, and see what to expect.

The goal wasn't just instruction. It was *familiarity. Comfort. Confidence.*

4. Designing for Kids, Not Coders

And finally, parents were very clear: *Don't make this look like homework.*

Make it colorful. Make it rewarding. Make it something kids actually *want* to open.

Noah (parent) suggested using the word “challenge” instead of “task.”
“It’s like a confidence builder,” he said. “My kid hears ‘challenge’ and he’s in.”

I planned on simplifying the layout, making it intuitive for children to navigate even without adult help. I wanted it to include playful animations, and every completed activity “unlocked” a horse as a reward-- complete with a name, a picture, and a fun fact from the barn.

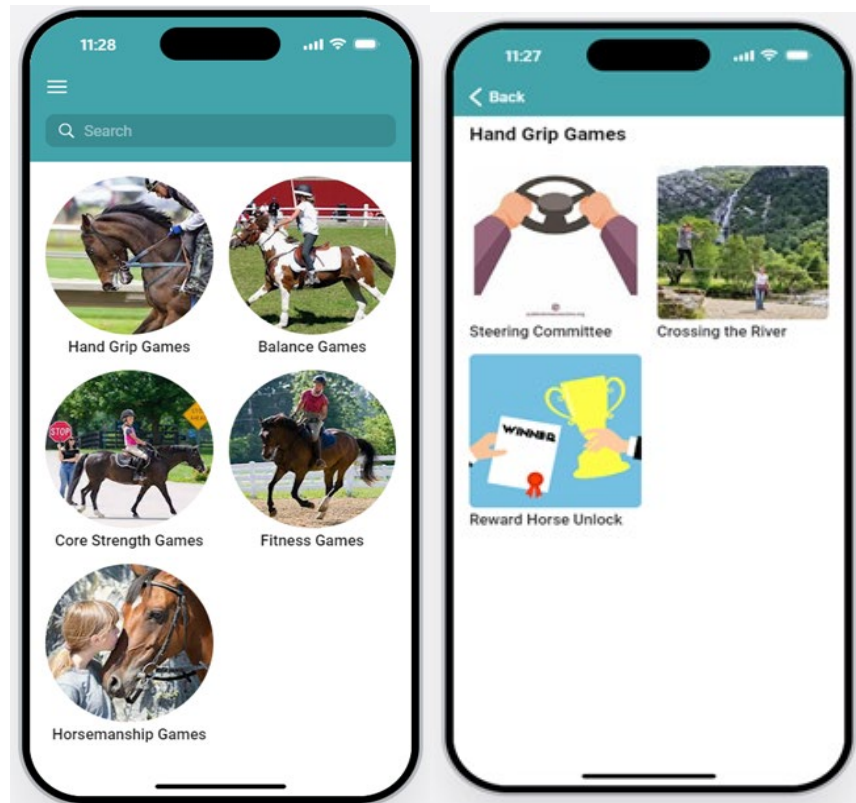
I wanted kids to feel like they were still part of the barn, even when they were miles away.

➤ **Development Phase: The App Comes to Life**

With all of these ideas and findings informed by the qualitative interviews, a lot of heart, and an incredibly supportive mentoring team, I built a multi-level app that mirrors a therapeutic riding session, from start to finish. To actually build the app, I used a platform called Glide®. It’s a no-code tool that allowed me to turn a simple spreadsheet into an interactive mobile app, no fancy programming required. I took the insights from the interviews, organized them in Google Sheets, and carefully imported everything into Glide®, building out the app screen by screen.

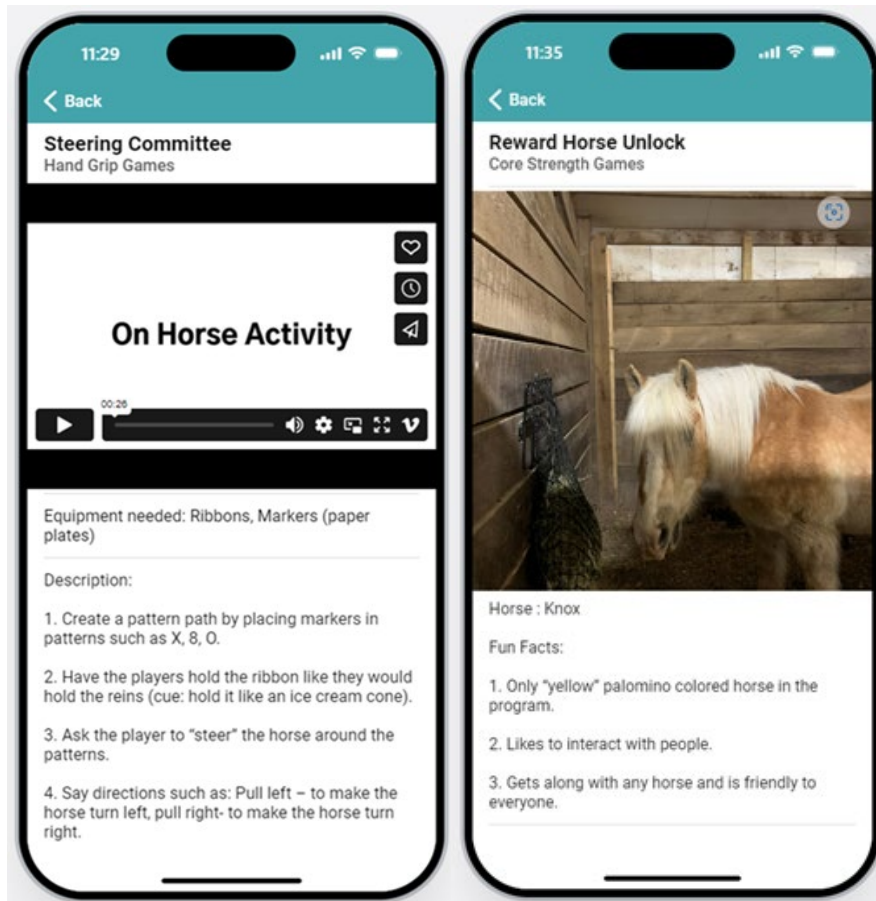
The new parent-mediated mobile app was developed and organized in the following levels: (i) home page, (ii) focus page, (iii) specific games page, and (iv) reward horse unlock page.

The **Home Page (Fig. 1)** introduced five domains—things like grip strength, balance, and core control, each inspired by real lesson plans from the barn at Three Gaits.



Tapping on any of the main domains leads to a **Focus Page (Fig. 2)**, where one can dive deeper into that skill area with specific games and activities. This focus page contained content related to the chosen motor outcome. For instance, selecting the handgrip games focus leads to a dedicated area within the mobile app displaying all handgrip games content. Each focus page further included three tabs. The first two tabs feature specific games/activities, while the third tab offers rewards for completing games/activities.

Each **Specific Games Page (Fig. 3)** featured a short, engaging video: first showing a rider performing the activity on horseback, then demonstrating how to try it at home. As for the written description, it offered a short, step-by-step guide constructed from verbal cues in the lesson plans used by riding instructors at Three Gaits. Equipment requirements were also mentioned in this section, including any items facilitating gameplay, mirroring those used in therapeutic horseback riding sessions.



And the best part? A **Reward Horse Unlock Page (Fig. 4)**, where kids unlock a real horse from the barn after completing their activities, learning its name, seeing its picture, and reading fun facts about their new equine friend.

It was therapy in disguise. It was a connection, extended.

Quantitative Phase: But Would It Work?

Once the app was built, I put it to the test with the same families and riding instructors who helped shape it. I asked them to use it for a period of two weeks, and then both groups of participants were sent a Qualtrics survey via email. The survey aimed to evaluate the usability (participants' perceptions of the newly developed mobile app's ease of use and usefulness) and social validity (participants' perceptions of its goals, procedures, and outcomes) of the mobile app when used alongside a therapeutic horseback riding program for autistic children

The feedback was *encouraging and honest*.

When I measured usability using a standard tool called the System Usability Scale (SUS), one riding instructor, Jazmyn, gave it a stunning 97.5 out of 100. Her review? "Excellent—Best imaginable." Another parent, Mario, scored it at 55—more modest, but still in the "OK—Good"

range. The average score? 80.5, which lands firmly in the “Good to Excellent” category. **In plain terms, the app was easy to use, and people liked it.**

But, as a researcher, it wasn’t enough for me to ask, “*Does this app work?*” I also wanted to ask, “*Does this app matter?*”

That’s why I looked beyond just usability and explored something called **social validity**. It’s a fancy research term, but the idea is simple: **Does this feel meaningful and useful to the people who are actually using it?**

So, I asked parents real-world questions in the same Qualtrics survey. Some example questions were:

- *Did this app help you support your child at home?*
- *Would you recommend it to another family?*
- *Did it feel like something made for you and your child and not just about you?*

Social validity is important because it reminds us that even the most well-designed tool is only successful if the people using it find value in it. As researchers, we don’t want to create something that looks good in a journal but gathers dust in real life. We want tools that families *want* to use, that feel empowering, relevant, and easy to fold into their daily lives.

The app scored high marks there, too. *The majority of participants strongly agreed they would recommend the app to other families. They said it was an acceptable tool for autistic children. They believed it helped reinforce horsemanship skills. And they genuinely enjoyed playing the games with their kids.*

Even on the lowest-rated question, everyone gave the same response: The app *captured the essence* of a therapeutic horseback riding session.

And to me, that’s the best kind of compliment.

Because the goal wasn’t to replace the barn, it was to carry a little piece of it home. To make therapy feel less like a weekly appointment and more like part of everyday life.

One parent summed it up beautifully:

"For the first time, I feel like I’m part of my child’s therapy team."

I realized: this wasn’t just a helpful tool. It was a seed. One that had the potential to grow far beyond the fences of a single barn.

Scaling the Vision

Thanks to support from the **Ira-Reily Baldwin Grant**, I am now expanding the app, enhancing its features, and bringing it to more families across the state. But I’m not just thinking about scale. I’m thinking about *sustainability, accessibility, and inclusion*.

Because here's the truth: not all families have access to consistent therapy. Not all children see themselves reflected in the tools they're given. And not every system was built with everyone in mind. As a multilingual woman of color and a global scholar, I know what it's like to navigate systems that weren't made for you. That's why this work isn't just academic. It's deeply personal. It's why I believe interventions should be built *with* communities, not just *for* them!

So, how do I take a small, research lab-grown idea and make it bloom across the state? I started with what makes Wisconsin special: its communities.

Growing the Program, One Center at a Time

Right now, there are over 17 adaptive horseback riding centers in Wisconsin. Each one is a hub of joy, resilience, and transformation for families of autistic children. Imagine if every one of them had access to this app, not as an afterthought, but as a built-in part of their programming.

That's my vision.

I'm not just handing over the app and walking away. I want to create a roadmap for real, lasting change by using the RE-AIM framework, a research-based model that ensures new ideas aren't just launched but actually land and grow where they're needed. [Here's how I'm doing it:](#)

Step 1: Listen First (Again)

My team and I have headed back into the community. We're sitting down with parents, certified therapeutic riding instructors, and community volunteers to ask:

- What would make this app easier to use?
- What might get in the way?
- What's missing?
- What do you love?

These conversations are helping us understand the real-life barriers and facilitators to implementing the app across different sites. And just like before, their insights will shape what comes next.

Step 2: Train the Team

After listening to as many voices as possible, the next step is to bring everyone together—parents, instructors, and staff—for hands-on training workshops. These workshops won't be just step-by-step tech tutorials. They'll be collaborative spaces where people can ask questions, share ideas, and build confidence using the app in real-world settings.

What Do I Hope to Achieve through the Ira-Reily Baldwin Grant?

1. **Adoption:** Riding centers like Three Gaits and others across Wisconsin begin implementing the app as a regular part of their therapeutic riding sessions.

2. **Empowerment:** Parents use the app to carry over what their children are learning, turning one-hour sessions into daily, joyful progress at home.
3. **Reflection & Refinement:** We gather feedback from every family, every instructor, and every community partner to understand what's working, what's not, and how we can make it better together.

This isn't just a tech solution. It's a human solution that is deeply rooted in play, powered by connection, and carried forward by people who care.

What makes this whole project special is that it is powered by something deeply local and deeply powerful: **The Wisconsin Idea** -- the belief that the boundaries of the university extend to the boundaries of the state. In other words, research should serve real people. Innovation should reach communities. And knowledge should move out of classrooms, into barns, onto phones, and into lives.

Why This Work Matters

In a world that often medicalizes disability and aging, I believe in joy as a form of medicine. I believe healing can come not just from pills or protocols, but from movement, connection, and purpose.

Whether it's an autistic child beaming with pride as they steer a horse, or an older adult finding stillness in the presence of an animal, these moments matter.

They matter to science. They matter to families. They matter to me.

What's Next?

As I look ahead to the next phase of my career, a faculty position where I can keep teaching, researching, and building community-driven programs, I carry this with me:

That healing is not a formula. It's a relationship.

That innovation can be playful.

And that inclusion isn't a feature. It's the foundation.

From ice rinks in India to stables in Wisconsin, from logic design to compassion, this journey has taught me one thing above all:

Do it with passion, or not at all.

And so, I continue... With a horse, An app, And a heart full of purpose.