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Finding the Right Balance

PT department chair at Fresno State University discusses innovative gait and balance center designed for students and clients

By Brian W. Ferrie

Peggy Trueblood, PhD, PT, professor and chair of the physical therapy department at Fresno State University, Fresno, CA, joined the faculty there in 1995 as an associate professor, having worked in academia for 10 years. About two years after arriving, Dr. Trueblood established the Gait, Balance & Mobility Research and Education Center. This innovative center has had a significant impact on physical therapy education at Fresno State and filled an important need in the community for clients who have balance issues. *ADVANCE* spoke to Dr. Trueblood about how the center was established, its mission, components and future development.

ADVANCE: Did you know that you wanted to establish a gait and balance center as soon as you arrived at Fresno State?

Dr. Trueblood: I started the center in response to the need for more aggressive balance programs in the San Joaquin Valley. In 1995, we conducted a research study with 200 subjects to determine what tests were predictive of falling in people over the age of 65. What we discovered was more than 70 percent of the people over 65 we sampled were at risk for falling and none were enrolled in any type of program that was addressing their needs. Of the 200 people tested, 30 had a fall the next year. Since these were people without a specific medical diagnosis, traditional physical therapy was not available and so we started a community-based intervention program at the university. An OT, Darla English, who I worked with at a local rehabilitation center and my colleague, and Toni Tyner at the university, helped me supervise our graduate physical therapy students in a class that we developed for seniors to attend and receive intervention for their balance problems.

ADVANCE: What were the steps you took with the Fresno State administration to obtain financial support for the center and space to implement it?

Dr. Trueblood: The first few years we ran the program as a class within our extended education department on campus. The clients paid a fee (\$50) to attend the eight-week program and that money was used to supplement the supervising faculty and clinicians for the class. The students, initially, were volunteers to help in the class. We soon realized we needed to establish an ancillary unit to allow us to compete for grant money, accept donations and establish a specific mission and goals as part of the department of physical therapy. Thus, we went through a process at the university to do that. The space that we used was a laboratory already dedicated to the physical therapy department.

ADVANCE: What does the center actually consist of, in terms of equipment?

Dr. Trueblood: We have the NeuroCom EquiTest system and the Balance Master with a long-force plate. There are also three treadmills with body-weight support systems, including one for pediatrics and two for adults. We have 3D motion analysis and eight-channel surface EMG for specific research studies, just not as part of the clinic because we need to prepare the room for that type of data collection.

The room we use is essentially the program's research laboratory but we've developed it into a clinic for our gait and balance programs. In addition, we have the type of equipment you would find in a basic outpatient rehab clinic, including a high-low mat table, low mat table, plinth table, Swiss balls, dynadiscs, balance beam, half-foam rollers, foam disks, balls and stairs. We also have infrared Frenzel goggles for testing subjects for vestibular problems, and the inVision system, which is part of the EquiTest system from NeuroCom that is a computerized dynamic visual-acuity test.

ADVANCE: Was all this equipment acquired through capital investment on the part of the university or through grants?

Dr. Trueblood: We acquired the majority of it from the university. Money obtained through internal state university research grants by faculty conducting clinical research studies paid for some of the smaller-ticket items including the balance equipment, treadmills and one of the partial body-weight systems. We acquired much of our research equipment such as the 3-D motion analysis system and eight-channel EMG system after the results of our self-study for accreditation in 1997. In response to the review team's recommendations, the university purchased these items for faculty and student research, which brought the program into compliance for this evaluative criteria.

ADVANCE: Upon establishing the center, what were your basic goals and mission?

Dr. Trueblood: Our primary mission is to conduct clinical research and train students and professionals for the evaluation and treatment of persons with gait, balance and mobility disorders. There are three basic areas we currently address: education and training, model practice and applied research.

In terms of education and training, the center was developed in part to provide a learning environment for our graduate physical therapy students. In particular, as an instructor and specialist in the evaluation and treatment of patients with neurological disorders, I needed to bring in clients with neurological disorders for the students to apply what they were learning in the classroom. In addition, when I started at Fresno State there really was minimal content in the curriculum addressing fall prevention in older adults, which is a key role for physical therapists. We now train not only our students, but also practicing clinicians in the San Joaquin Valley on contemporary and current practice methods for the neurological patient population and older adults at risk for falls.

As far as model practice, the center is based on current practice and evidence in the literature from clinical research studies, conducting more aggressive gait-training programs such as the use of partial body weight for facilitating gait in patients post-stroke, spinal cord injury, and those with Parkinson's disease. Students and faculty involved in pediatrics have also conducted case studies with children using the partial body-weight support for improvement of gait. The balance interventions that are used with clients are based on best-practice models incorporating a multifactorial approach including multisensory training. The use of the EquiTest system for both assessment and treatment is also encouraged with our students.

For the third area of emphasis, applied clinical research, we have several ongoing student and faculty research projects in the center. The emphasis has been on looking at the effectiveness of specific intervention programs for gait or balance; determining appropriate tests for balance and gait; development of best practice models for fall reduction programs; looking at the effectiveness of partial body weight in chronic stroke patients and children with cerebral palsy; use of educational programs for patients with osteoporosis; and comparing various intervention programs in those with neurological conditions.

ADVANCE: Is the center receiving patients on a daily basis?

Dr. Trueblood: No, we don't consider ourselves a traditional outpatient clinic. And, in fact we do not have a Medicare site license or bill insurance companies. The clients that come to our program are people with balance or gait problems who either would not qualify for traditional physical therapy (no medical diagnosis) or have had physical therapy in the past, but are now no longer eligible. Many of our referrals are from local physical therapists for patients who have completed their outpatient services, but would still benefit from more intervention.

Our emphasis at the university is more on the education and research components, as opposed to a service component. For example, many times the intervention programs that clients are enrolled in may be part of a student or faculty research project. Some of our studies have involved people with chronic neurological disorders, such as Parkinson's disease, stroke, ALS and vestibular disorders.

The center provides a community-based program for people with significant gait and balance problems. It is an eight-week program, two times per week for one-hour sessions. Our senior physical therapy students are each assigned two clients. As part of the curriculum, the student is responsible for assessing, interpreting the assessment and providing appropriate intervention. We have four core faculty members who oversee the program and supervise the students.

In addition, the junior graduate physical therapy students are utilized as "helpers" and "spotters," which allows for a more aggressive approach, especially with gait and balance activities. In addition, these students get to practice basic clinical skills such as taking blood pressure. For teaching purposes, students learn appropriate documentation skills, filling out Medicare 700 and 701 forms. They write up their assessment, set appropriate goals and reassess to determine if their intervention plan is working. Students really like this type of setting they get hands-on experience, can follow the client for the entire eight weeks and learn how to progress treatment interventions but without the pressure of a more traditional clinic and heavy patient workloads. They also have clinical faculty available to answer questions and provide feedback. We feel this is a great learning environment for our students to prepare them for their traditional clinical rotations as part of the graduate physical therapy program.

We're really trying to conduct more of a model practice, preparing students to be consultants and independent practitioners, which is in line with our profession moving to more autonomous practice. I feel this is an environment where students can actually be autonomous; making decisions based on their assessment, practicing differential diagnosis and referring back to the physician when appropriate. Our clients may be self-referred, physician-referred or physical therapist-referred. Students learn to treat the "whole" patient and become real advocates for their clients, depending on needs.

There have been times when we have had to refer a client back to a physician for a diagnostic workup. If they are eligible for traditional physical therapy, and therefore reimbursable, we generally refer them to PTs in our area who have outpatient clinics. But sometimes it's an older adult who's concerned about balance or is at risk for falling. They may not have a specific medical diagnosis and therefore are not eligible for physical therapy services through their insurance. The balance center can provide a comprehensive balance assessment to determine the cause of the balance problem and provide more data to determine the most appropriate intervention.

In addition, people with chronic neurological disorders that cause gait and balance problems may benefit from more detailed testing and/or more aggressive and longer training to maximize their functional potential. That person could come to our eight-week program. The client pays out-of-

pocket and the fee is now \$250. For those clients who cannot pay the full amount, a sliding scale may be used. Once in a while, our students actually pay the clients' fee with their fundraising money.

ADVANCE: Does every student who comes through the PT program participate at the center?

Dr. Trueblood: Yes, it's now part of the curriculum. First-year students enroll in our Clinical Learning I course. As part of that, they assist one of the senior students with their client in the center, as well as work in our community-based group balance classes as spotters. We assign half the class in the fall semester and the other half in the spring semester. Then as second-year students they enroll in our Clinical Learning II course, which now gives an opportunity for students to demonstrate appropriate clinical decision-making skills, as they are responsible for overseeing two clients from beginning to end of the eight-week program.


ADVANCE: Are there occasions when you'll ask prospective clients to wait until the following semester because the maximum number of clients has been reached for the current one?

Dr. Trueblood: Yes. We do have clients who want to enroll more than one time. We are very careful not to do maintenance-type [therapy] as part of the program. The criteria for admission to the program is that the client has a significant balance, gait or mobility problem and that the student, faculty and client can come up with very specific goals that are feasible to attain in eight weeks. We try to be fair with clients and therefore give priority to "new" clients coming in. In addition, we try hard to give students as much experience as we can by assigning them each two very different clients one that may have impairments secondary to a specific neurological disorder vs. one that may be high level and requires a very challenging intervention program.

ADVANCE: How would you say the center and its various aspects compare to your vision when you established it 10 years ago?

Dr. Trueblood: I think it is accomplishing our goals, but my vision also involves becoming a premier research and teaching center that would attract outside funders and grant money to enhance and sustain larger programs. For the profession, I would like to see it grow to be a regional comprehensive assessment center where all physicians and physical therapists would refer patients with balance and gait problems, using the results obtained from the computerized testing to drive their intervention programs. I envision a regional testing center that would be the "first stop" for the older adult with gait and balance problems. To achieve this vision, I think it is vital that the university and professional community become partners, sharing their resources and gaining from one another's strengths for the good of the patient with gait, balance and mobility problems.

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