Researchers have long known that immigrants are twice as likely as the general population to suffer from depression. In a recent study, Hunter College nursing professor Kunsook Bernstein, PhD, examined how those rates are reflected in immigrants—particularly those who, like her, came to the U.S. from Korea. “We decided to launch a prevalence study to see how immigrants are adapting to the culture and how it has an impact on their mental health, and depression is one of the common mental health issues,” says Bernstein, a board member and research chair of the Korean American Behavioral Health Association. “But most immigrants don’t seek help, because they look at it as part of their way of life and just bear it.”

With the help of Korean community organizations like churches, senior centers, and college student groups, Bernstein disseminated a questionnaire that explored issues of mental health, cultural assimilation, and discrimination. She got about 300 usable responses—and found that, in fact, the rate of depression (13.2 percent) was more than twice that of the general population. (The study only targeted adults; about 60 percent of respondents were female, and the researchers found no difference in depression rate between the genders.)

Among the most significant factors in immigrants’ tendency to depression, Bernstein says, are education, income, and language proficiency; those with higher levels are less likely to be depressed. “It has to do with their adaptation skills,” she says. Her study also confirmed that Koreans, like many immigrants, are often reluctant to seek mental health treatment. In collaboration with Heejung Bang, PhD, a Weill Cornell associate professor of biostatistics in public health, Bernstein has since put in another grant application to the CTSC for a study of the barriers preventing people from asking for help. In another project, funded with a small grant from CUNY, she has been exploring the potential of autobiography as a therapeutic outlet for Korean immigrant women. “The Western style of psychotherapy does not work well with them,” she says. “But if you ask them to write their life stories, they can find meaning and purpose in their lives.”

Each year, some 80,000 surgeries are performed nationwide to reconstruct the anterior cruciate ligament (ACL). The ligament—the vital “rubber band” crossing the knee—is commonly injured by athletes such as skiers or basketball players who stop and turn suddenly. At Hospital for Special Surgery, which performs 700 to 800 of the operations each year, mechanical engineer Carl Imhauser, PhD, is studying the biomechanics of various strategies for ACL reconstruction. His goal: to reduce the incidence of osteoarthritis (OA), which commonly strikes patients a decade or two after surgery. “That’s important, in that the people who tear their ACL are usually young,” says Imhauser, a postdoc in the department of biomechanics. “Someone who has surgery at thirty and gets OA ten years later still has half his life in front of him or her.”

Imhauser notes that the human body is a load-bearing structure, operating under the force of gravity—and that even the most skilled surgical reconstruction involves upsetting the delicate interaction among its cartilage, ligaments, and bones. “OA deals with the breakdown of cartilage, the tissue in your joints that allows the joint to move smoothly,” he says. “The health of that tissue is intimately related to the loads that it sees. If those loads are altered, over time you see the onset of OA. But if we can characterize how loads are transferred and target surgeries that best restore normal patterns, then maybe we can help people avoid going down that path.”

Imhauser’s work includes experiments with cadaver knees, which are mounted on a robot that can move in six degrees of freedom. “It can push or twist the joint in basically any direction and allows us to precisely measure how the joint moves in response to those forces,” he says. He’s also using the robot to evaluate predictions from a computer model; the model allows him to manipulate a virtual knee joint and see how various surgical approaches would affect the function of the joint. Such work—which could also be applied to other orthopaedic procedures, such as design of knee replacements or meniscus repair—could ultimately allow surgeons to tailor their techniques based on a patient’s anatomy. “Each of us has unique bony geometry and ligament structure, which dictates how we move and how loads are transferred across the joint,” he says. “For patients with a certain shape of bone and ligament structure, you might be able to say, ‘This kind of reconstruction is most appropriate.’”