MATT BRANDENBURG:
You're listening to Everyday Evidence presented by the American Occupational Therapy Association, helping the occupational therapy practitioner apply evidence to practice. Here's your host, Matt Brandenburg. Today, we are joined by Renee Causey-Upton. Thank you so much for sharing your knowledge and expertise with us on the show today, Renee.

RENEE CAUSEY-UPTON:
I'm happy to be here and thank you for having me.

MATT BRANDENBURG:
Yes, it is our pleasure. I've been looking forward to speaking with you and getting to know you, and most importantly, learning from you today. You are the Associate Chair and the Graduate Program Coordinator, as well as an associate professor at Eastern Kentucky University. And today, we will discuss occupation-based treatment in the orthopedic setting and some of the research that you have conducted and mentored related to pre and post operative interventions for total knee replacement surgery. Renee, talk to us about your background in this area. I know you've done work since your OTD capstone in 2011, and you've published during your PhD and continue to mentor ongoing research. What has motivated you to focus your scholarship on this area of occupational therapy practice?

RENEE CAUSEY-UPTON:
Well, when I first started practicing as a new occupational therapist, my first position was in acute care, and I often worked with clients on the med surg orthopedic unit. So while most patients did feel ready for discharge, some did not, and there didn't really seem to be a clear indication or predictor of which patients would feel ready for discharge and who would not. So sure, there were some factors you could identify, such as social support, whether or not the patient experienced complications after surgery and their functional level. But there were times even that patients who lived with someone at home who could help them, and even when they had pretty high independence levels with ADLs at discharge, who still did not feel ready to go home. So this sort of led me to question what factors might be impacting their perceptions of discharge readiness from the acute care setting. And this led me to return to school to pursue a post-professional doctorate in occupational therapy, where I first began research in this area.

I continued practicing in acute care with orthopedic clients, PRN as needed for several years after I entered academia. And then I completed a PhD in Rehabilitation Sciences, where I continued my focus on total knee replacement, readiness for discharge, and also preoperative education. And now, I'm inter post-professional OTD students and PhD students in some of these same areas, such as discharge readiness and perioperative education, with a focus on health literacy. So this area has really been a passion for me from the start of my clinical career and continued into my doctoral studies as well as in academia. So there are classes I teach related to physical disabilities or have taught in the past that still relate to TKR. And then I continue to mentorship student research projects as well in this area.

MATT BRANDENBURG:
Wow. I want to say thank you, Renee. You're really such a wonderful example of recognizing a question in clinical practice and noticing the varying degree of perception of discharge readiness and doing something about it, going to, you know, study your PhD and helping that guide so much of your work to try and improve the system and improve outcomes for those patients that you work with. And I think that's just really inspiring and encouraging. Why do you feel it's important for occupational therapy professionals to kind of do the same in their own practice, but most importantly, to understand and be proficient at providing this type of care to people undergoing TKR?

RENEE CAUSEY-UPTON:
Well, I think people often think of physical therapy first related to lower extremity conditions like total knee replacement and total hip replacement. But physical therapy is mostly focused on things like lower extremity range of motion, strength, walking distance, stair climbing. And certainly, these are factors that are important and would be tasks a patient would complete after returning home. But we know that these will not automatically equate with ability to complete valued and necessary occupations. And also, if you look at how discharge readiness is typically defined and measured for total knee replacement in the literature, the focus is on most of these areas that I just mentioned, along with having good pain control without the use of intravenous pain medication. Again, all important factors related to discharge readiness, but they fail to consider functional performance and occupations. So occupational therapy has an important role in addressing independence with ADLs, IADLs and beyond for patients after TKR.

If a patient only received PT, they would not be prepared for returning to home, because our days are filled with much more than just walking, climbing up and down stairs and completing exercises. So as occupational therapists, we have an important role in orthopedics, and we need to demonstrate our unique contributions and continue to advocate for our role in this area.

MATT BRANDENBURG:
I love that. That's so well said and really summarizes occupational therapy's unique role and contributions in improving outcomes for patients following a total knee replacement. What are some common complications that patients may experience following a TKR?

RENEE CAUSEY-UPTON:
So most most patients have good outcomes after surgery. But there are complications that can occur in this early phase after surgery and beyond, even later once they are discharged home. So research suggests that as many as 15% of patients may experience a complication after total joint replacement. For total knee replacement, some examples of these complications include things like blood loss and the need for blood transfusions, which of course impacts our ability to see those clients for occupational therapy. It impacts their energy levels and some of their restrictions with what they're able to do, while their hemoglobin and hematocrit are still low. Some other complications are things like hospital readmission, and this actually occurs in about five to 8% of patients. Usually, it's due to things like deep vein thrombosis, infection or arthrofibrosis, which is when a patient loses range of motion and has a significant restriction in joint mobility due to the formation of scar tissue.

Falls also happen fairly commonly, and this can lead to fracture. Or if it's really early in the recovery phase after surgery, we could also see wound dehiscence as well. Some research, especially with much older adults who undergo TKR, has reported up to 40% of those individuals falling in the year post-surgery, and that's just a huge statistic. Also, there can be aseptic loosening or loosening of the TKR components. And then in general, I think a lot of patients experience functional limitations longer than they anticipated. So, for example, it usually takes a couple of months before patients can return to IADLs like home management tasks and grocery shopping. Many patients still cannot complete outdoor occupations, such as gardening, even six months after their surgery. And I was just reading a recent article that demonstrated that between a fourth and a third of people who underwent total knee replacement still cannot kneel on their surgical extremity even one year after surgery. And we know a lot of higher level occupations may require kneeling, so this could be a limiting factor for a long time after surgery.

And again, most patients will have positive outcomes after TKR. But for those who do experience complications, research has demonstrated delays in hospital discharge. And then if these complications occur after the client is already at home, then there are higher readmission rates, and that leads to a whole host of problems. It puts them at risk for things like hospital acquired infections and further reductions in their functional abilities.

MATT BRANDENBURG:
Wow. In reviewing some of your research on this topic, I found that your studies report that up to 19% of patients are not satisfied with the results after a total knee replacement. You know that those readmission rates, like you mentioned, can be pretty high upwards of, you know, five to 8%. So it's really, you know, making sense to me why these complications and why, you know, this is such an area of need for occupational therapy. What would you say occupational therapy can contribute to improving these complications?

RENEE CAUSEY-UPTON:
A lot of these complications, not all, but a lot can be prevented or maybe lessened by things like preoperative education and better preparing clients for discharge home. We also have this unique role related to addressing clients holistically as individuals and maintaining a focus on function. So we're a critical part of the interprofessional team for clients after total knee replacement. You know, we've already talked about, there's this big focus on outcomes after TKR related to things like ambulation distance, ability to climb stairs and so on. But OTs and PTs need to work together to truly see functional gains. So some of the more physical skills like balance, gait training, general strengthening, those don't equate to functional performance. And so, we really do have to bring in that functional piece and make sure clients are safe to be at home and completing not just self-care, but other tasks. This can help to prevent things like falls, making sure that we are guiding clients within the instructions from their surgeon.

You know, how can they complete bathing after their surgery? Do they have a dressing that's water resistant or not? Typically, you're not allowed to soak the surgical site for many weeks after surgery. But if the client has a waterproof dressing, then they may be allowed to shower. Educating them on signs and symptoms of complications before surgery, but also after surgery. So making sure they have an awareness of what does a DVT potentially look like, what are signs of a pulmonary embolism, what are signs of an infection. And again, if we're addressing things functionally better preparing them for discharge home, we can help them in terms of reducing risks for falls or for, you know, doing things that don't align with their current precautions related to their diagnosis.

MATT BRANDENBURG:
Absolutely. An emphasis on those functional outcomes can make such a huge difference, I would imagine. What are some of the physical, social and environmental factors that influence a patient's functional outcomes and their discharge readiness that you emphasize addressing for OTs practicing in this area?

RENEE CAUSEY-UPTON:
So it's unfortunate that in the literature, there's a big focus on those physical components that we already talked about. I mean, one of the biggest is achieving greater than or equal to 90 degrees of knee flexion. But that's not really, you know, clearly linked to occupational performance. And so, these types of things are not inclusive enough. There's a lot of other factors that relate to discharge readiness. So independence was self-care tasks, a variety of functional transfers as well. We want to make sure that clients are able to get in and out of bed safely and independently for their sleep at night and their sleep hygiene. We want to make sure that they can transfer safely to a shower, to their toilet, to the car even as well. And these are linked with readiness for discharge home. A lot of IADLs are not addressed in acute care for this population in many settings, but really, they should be in some way, at least through education and resources. So we know early on that patients are most concerned with self-care tasks initially after surgery.

But in the weeks that follow, they become increasingly more concerned with these higher level occupations. And that happens often before many of them are able to complete those tasks independently. Patients are also more likely to have referrals for physical therapy after discharge from acute care following TKR than OT. So we need to be addressing these higher level occupations, even starting in acute care, to better prepare them to complete these tasks at home. And there are other physical factors to consider before surgery, which can be predictive of those post-operative outcomes. So whether or not a patient has used a mobility device before surgery, and other aspects of preoperative function have been linked to outcomes after total knee replacement. So patients who have lower functional leverage before surgery, including needing a mobility device, they are more likely to have longer length of stay and have higher rates of readmission as well. Prehabilitation for strength training has been linked to improved post-operative outcomes too following total knee replacement.

So I know OT would not typically be the therapist providing lower extremity prehabilitation exercise. But if we know a patient has received this training, we can anticipate better outcomes, and we can also prescribe upper extremity strengthening exercises to support sit-to-stand and using a walker to complete occupations and functional transfers. So, you know, some of the areas linked to post-operative outcomes may not be, you know, fully aligned with OT, like I said, lower extremity strengthening. But if we have an awareness of these factors, then we can make better discharge recommendations. So I think that's a big component of that, along with addressing areas of occupation that do align with OT and making sure that we go beyond just self-care because patients at home are going to do a lot more than just getting ready for the day, right. They're going to want to return to those other valued occupations.

MATT BRANDENBURG:
Absolutely, absolutely. These are such wonderful insights and such helpful information for practitioners. What additional factors or recommendations would you give to practitioners to help them consider and address these functional outcomes and higher level occupational performance when conducting an evaluation and planning intervention for total knee replacement patients?

RENEE CAUSEY-UPTON:
Well, there's a lot of, you know, social and environmental factors to consider as well. And actually, lack of social support at home has been identified as one of the main factors that can delay discharge after total knee replacement. But the type of social support matters. So does the patient live with someone at home who's able to provide assistance? Do they have a family member close by who could stay with the patient in that early post-operative phase while they recover? Some patients, though, they report being uncomfortable with changes in their social roles after surgery, or maybe their partner or their caregiver just wasn't able to provide the type of social support they needed. So we want to make sure that we're preparing the caregiver as well for the patient's discharge home. Another piece of this, I guess, not so much with evaluation, but in general, in terms of the health care environment is, you know, how friendly and knowledgeable are the health care providers that the patient encounters?

If we were able to meet the patient in advance of surgery through preoperative education, for example, this has been found to be comforting for clients post-surgery because they see a familiar face. We want to make sure that clients are getting consistent information before surgery, after surgery, from every provider they encounter. That helps to make them feel more confident in the information that they're receiving. Some other pieces of social support, you know, relates to whether or not a patient has had prior experience with total knee replacement. So maybe through a partner, a friend, another family member, or even having, you know, clients come in who've already discharged home after total knee replacement and letting them speak to prospective patients or future patients about their experience. So that can be a good form of social support. And, of course, environmentally at the time of evaluation, we need to be asking a lot of questions about their physical home environment. It's a lot easier to be prepared for home if you live in a single story house with no steps to enter, or one or two steps, versus a split level home that has multiple steps to enter and may not even have a railing.

The inside of the house matters too. Are there really narrow hallways? Are the bathrooms really small and going to be difficult to navigate with the walker? So we've got to think about a lot of those physical pieces as well. And I didn't mention earlier, but there are some other factors to consider related to discharge readiness, not necessarily factors we can change, but just things to have in mind when we're thinking about how well this client might do and what their level of readiness could be. So people, for example, who have lower pain scores and better function pre-surgery often have better outcomes after surgery. Patients who are younger also tend to have better outcomes, are able to discharge sooner than some of our older clients. We have to think about comorbidities and, you know, complications after surgery, which could create additional challenges for recovery as well. It's still important to remain client-centered, though. So we don't want to just assume that a client who's older is going to need a lot more time or that they can't discharge home, but it's something to have kind of in the back of our mind as we're completing that discharge planning.

MATT BRANDENBURG:
Absolutely. And as is the case in all intervention, maintaining, you know, a client-centered focus and a holistic approach to address social support, education, the unique environmental factors, everything that you've mentioned for these clients. You've mentioned, a number of times now, the importance of preoperative education and how that can impact and influence outcomes for someone who undergoes a total knee replacement. Why would you say preoperative education programs are so common and so important to intervention?

RENEE CAUSEY-UPTON:
Well, we've seen lengths of stay really decreasing substantially over time, and many joint replacements are even being completed in outpatient settings now. So therapists have less time with patients post-operatively than we ever have before in acute care. So education and training need to begin sooner so that we can achieve optimal outcomes. We want to make sure that patients have their home environment set up safely to prevent falls. They may need to purchase equipment in advance or make other preparations to help support their function after discharge. They also need time to realize, you know, strength gains before surgery. So if we are involved, for example, in upper extremity strengthening training, there needs to be enough time for those muscle strength gains to be realized. Some surgeons even require attendance at preoperative education. But for others, this is optional or maybe just highly encouraged. But if patients don't attend preoperative education, they'll be less prepared for discharge home, and they might even be unprepared for aspects of their hospital stay as well.

So maybe they don't bring appropriate clothing or footwear from home, and that can impact what occupational therapy is able to do with them while they're in hospital. At discharge, their caregiver might arrive in a vehicle that's really difficult for the client to navigate, or it might be really uncomfortable if they have a long drive home. So there's just, you know, many reasons that preoperative education is important, not only for the post-operative phase at home, but also for just the hospital stay, too, after surgery.

MATT BRANDENBURG:
Have you found, in literature, preoperative education programs to be effective in improving outcomes post total knee replacement? And what kind of makes a preoperative education program effective?

RENEE CAUSEY-UPTON:
So yes, there has been a lot of studies that have found effective outcomes following preoperative education. Now, larger systematic reviews have sort of found mixed evidence, but individual studies overall have shown these positive results. So things like decreased anxiety, increased preparation for surgery, shorter length of stay, better pain control, reduced falls even in the hospital. So that's a really important outcome because that's a time frame when if a client were to fall, they'd be more likely to have some of those negative outcomes like the wound reopening again, putting them at more risk for infection. So that's a really strong outcome. And people also have more realistic expectations after surgery. So they kind of know what to expect. They know more about, you know, how long it might take for them to recover and return to certain occupations. There's also been some links to outcomes like post-operative knee range of motion and ambulation distance, which I know relates more to PT, but it's another strong, you know, outcome linked to preoperative education.

And there's been some studies that have linked pre-op ed to functional outcomes measured by the KOOS or the knee injury and osteoarthritis outcome score. And that assessment does include different items that relate to occupations like dressing, shopping and household management. So that's an important outcome as well. So yes, preoperative education has a lot of positive impacts that are relevant to occupational therapy and our clients. And I believe you had also asked me what makes preoperative education program effective. You know, there's a lot of information about how preoperative educations aren't always consistent across regions or even nationally. There's a lot of variation there. And so, I think we have to think about things like, in terms of timing of the preoperative program, you know, how far in advance do we hold those sessions? Because we want to have it far enough in advance of surgery that clients are able to purchase equipment, update the home environment, complete exercises, but you don't want it to be so far in advance that they may be forgetting important information.

So that's kind of a delicate balance. So probably, somewhere between two to four weeks I think is the sweet spot in terms of that timing. We also have to think about things like the length of the program. So I've seen, in the literature, as short as 12 minutes from a prerecorded video up to, you know, a half a day long preoperative education program or even longer. But we have folks attending these sessions who have osteoarthritis, and this arthritis is severe enough that they're needing a joint replacement. So how long can they practically sit and complete a preoperative education and sustain their attention? So those are all some pragmatic factors that we have to consider. But I think in general, making sure we're providing education in multiple formats because we know, just based on pedagogy, that that helps to support diverse learners. It helps to reinforce the content and promote retention and recall of the information. So that's important. We also want to make sure we are addressing health literacy.

So there's research that in general, most individuals in the US have a lower level of health literacy. And actually, literacy related to orthopedic and other musculoskeletal conditions is even lower than general health literacy. So we really have to have that piece in mind and make sure we are designing our education materials in a way that we just kind of assume that individuals are going to have this lower health literacy. And that way, it's, you know, more likely that they'll be able to understand that information. We're kind of doing it in a universal sort of way.

MATT BRANDENBURG:
I love that. I love that emphasis on health literacy and also the importance of education delivery and format and timing and length. What about when it comes to content? What are some of the important topics to include in preoperative education?

RENEE CAUSEY-UPTON:
So things like, you know, how do I prepare for surgery? What should I expect while I'm in the hospital? And you know, the recovery process, definitely including information about realistic expectations about pain, because this is something that patients often report, not realizing just how much pain they would have after surgery. Pain management techniques, not just pharmacological, but other types of interventions as well that can help to reduce pain in hospital. Exercise before and after surgery, adaptive equipment, how to perform self-care and other tasks like IADLs after surgery. Any precautions that the client would need to follow, home safety and home modifications, functional mobility, and again, expected functional outcomes when clients can expect to achieve certain milestones in terms of function. Because often, patients underestimate, you know, how long it's going to take to return to all of those daily occupations. So that's really an area that we need to do, I think, a better job in terms of preparing clients for that post-operative phase.

There are other topics too that are important, like nutrition to support wound healing. How do we manage edema? Just the anatomy of the knee joint itself, so that patients can understand that surgical process a little better. And certainly, caregiver training. I don't know why I mentioned that last because it's very important. But we definitely want to make sure that the family member or caregiver or whoever is going to assist them after surgery is getting that education, too.

MATT BRANDENBURG:
Absolutely. It sounds like a well structured preoperative education program can be really empowering and beneficial to clients. Let's say I'm a practitioner, and I'm hearing you describe this and kind of realizing to myself, like, oh, my current, you know, education program isn't addressing all these topics, how would you say an existing education program could be restructured to improve patient outcomes?

RENEE CAUSEY-UPTON:
Well, I think that all preoperative programs should really complete regular program assessment and, you know, consider making changes that could improve this education experience and outcomes for their clients. So doing things like surveying patients after they've completed the program, maybe at multiple time points, I think, for sure once they discharge home, because they may have a more, you know, realistic understanding of what they learned in that class, but also what they did not learn. So I think that's a good way to gather some feedback that might guide changes. Tracking program outcomes and just seeing how effective is the program. And if it's not as effective as you would hope, then yeah, it's probably time to make some of these changes. I think looking at the literature to see what's out there in terms of, you know, things that are resulting in better patient outcomes, maybe even observing other preoperative education programs for some ideas that could maybe spark a change in your own education program as well.

So I think things to consider just might be the content areas if some of those are not being covered, maybe also thinking about the way that education is delivered. So most programs are delivered in group format, which does have a lot of benefits. You know, patients might meet other patients there, maybe they're going to see post-surgery, like in a group exercise class. So that's another friendly face. And maybe they've, you know, developed some social support there. One person's question might spark other questions that other patients may not have even thought of, or maybe they just didn't want to ask. So there are benefits there. Also, things that happen in individual education can be even more personalized. Or maybe a client isn't going to ask a sensitive question in front of the whole group that they might ask as an individual. So I think in an ideal world, pre-op ed would include those group components, but also individual components as well. I think addressing the health literacy piece, I know we've already talked about that.

So kind of using this idea of universally making sure materials and content are presented in a way that it's accessible to folks with lower health literacy, the multimodal education. So if current education is only being delivered in one format, I would think about adding, you know, additional formats, because again, that'll support more learners and reinforce the information for better comprehension.

MATT BRANDENBURG:
Thank you Renee. Those are wonderful recommendations for quality practice and intervention using an education program. Can you share an example of when you've seen a preoperative education intervention contribute to a positive outcome for a patient?

RENEE CAUSEY-UPTON:
Yes. I'm actually thinking of some research that I completed for my OTD capstone. And so, I had made additions to the preoperative education program at the facility to include information about adapting higher level occupations IADLs after surgery. So things like adaptive equipment that patients might need to purchase to help support their function. And so, what I did find that patients who attended the session after these changes were implemented to update that preoperative material and information, they were more familiar with, you know, some techniques they could use to be more independent with IADLs as well as adaptive equipment that they might need. And some had already purchased this equipment as well. So they were more prepared to complete these occupations after discharge. So, for example, I remember one client in particular who they had already purchased an automatic dog food and water dispenser. They had this set up in advance to be able to care for their pet more independently after discharge while they were still in that early post-operative phase.

So I know that we wouldn't normally think of that as being, you know, a big part of occupational therapy. But for many individuals, you know, pets are like a family member. And so this was really important to this client. And they were prepared to do that occupation more independently because they learned about those devices in their preoperative education program.

MATT BRANDENBURG:
That's such a wonderful example. And, you know, those IADLs, those higher level occupations are so important to client satisfaction and well-being after, you know, a major procedure like a total knee replacement. How would you say participation in an IADL occupation-based orthopedic program improve patient outcomes?

RENEE CAUSEY-UPTON:
Well, I think this type of program just better prepares patients for a fuller spectrum of occupations that they would typically complete at home. So ADLs are important, obviously, and patients do need to be able to complete these for discharge. But they're only part of most people's daily occupational tasks. So receiving education and training for how to adapt to complete these occupations while a patient is still recovering from surgery can make them more prepared to complete these tasks at home. Of course, some occupations may not have a safe adaptation. But we can, you know, help patients plan for an alternative way to get these tasks completed or help them problem solve to arrange for assistance in still completing these tasks. Because we know that patients are mostly concerned with ADLs in that early phase, they might not yet be thinking ahead about some of these other valued occupations that they're going to have difficulty with. And so, you know, we can help with this planning.

I will say, too, that patients who have participated in this type of training in hospital, they have reported being more prepared to complete, you know, specific IADLs at discharge. And they've also reported less anxiety related to discharge compared to those whose treatment only focused on ADLs, which is sort of the standard practice in many facilities in acute care.

MATT BRANDENBURG:
That's a wonderful outcome and a focus on IADLs can help patients achieve that. What are some of the interventions that you've used or that you've seen implemented to help patients achieve that outcome and increase their preparation for discharge?

RENEE CAUSEY-UPTON:
So we've already talked about a lot of things education, ADL retraining, IADL retraining. So I was going to mention kind of some different areas that maybe we don't always think to focus on in orthopedics. So I think pain management and coping techniques. So we want patients to have, you know, something in their toolbox that can help them with pain management beyond just pharmacologic interventions. So there may be times that clients have breakthrough pain or, you know, pain that has increased before it is safe for them to take their next dose of medication. So we want them to have some strategies there. Patients also have anxiety sometimes after surgery. It's pretty common after a major surgery, which I would consider TKR and total hip replacement to be that people have a little bit of, you know, a psychosocial response to that. And so, let's help them have some items in their toolbox to manage that too. So relaxation techniques which can help with both pain and anxiety, having the client identify some leisure and other activities that are important to them that they can complete in the meantime, while they might not be able to return to work right away.

Or if there are other occupations they can't do, they need something to fill their time. We know that we are occupational beings, and we are at our best when we have a daily repertoire of different valued occupations to complete. So we might have to help them think about what are some tasks I can safely complete that are less physically demanding while I'm still in this recovery phase? I think also addressing energy conservation and work simplification. So patients are often fatigued after surgery. Blood loss is common. Even if a patient doesn't need a blood transfusion, they probably still are going to be fatigued a little more easily than they did before surgery. So helping with that sort of training can be useful. Addressing other areas of occupation that are concerns for individual patients that we might not always have at the forefront. So one example I can think of is, you know, grandparents who were concerned about interacting with their grandchildren in the early post-operative phase, and trying to give them some tips and advice for positions to hold their grandchild in for their own comfort, and giving them ideas about completing less active tasks, such as reading books and other sorts of seated activities they could do while they're still recovering.

I think OTs are creative and we focus on client-centered care that's occupation-based. So we really have a unique opportunity to address a wide range of patient needs beyond just ADLs and IADLs. So I think that's what makes OT such a strong contributor to patient outcomes after orthopedic surgery.

MATT BRANDENBURG:
That is so well said, Renee. Thank you so much for those recommendations. This is such valuable insight. Can you describe for us your role in mentoring PhD student research related to perioperative education and health literacy for clients after total joint replacement?

RENEE CAUSEY-UPTON:
I've served on several PhD committees as part of an Inter-professional program that's offered through University of Kentucky and where my university, Eastern Kentucky University, serves as a partner. So I'm an adjunct faculty member at UK, but my main roles are here at EKU. And most recently, I chaired the dissertation committee for a student, Doctor Allen Keener, whose research focused on health literacy practices of rehab providers of perioperative education. So this was a three part dissertation that included a survey study that described the ways health literacy is currently addressed by providers of orthopedic education before and after surgery, because this had not been well described in the literature yet. So we don't actually know what that looked like before this study. And this was followed by a qualitative study that explored experiences of OT and PT providers in addressing health literacy with patients during perioperative orthopedic education. And then the final study examined the impact of an educational training on health literacy and how did this affect these providers knowledge levels and perceived confidence for addressing health literacy in perioperative orthopedic education.

So in my role as the committee chair, I mentored Doctor Keener in identifying a gap in the literature that needed to be addressed and then provided mentorship related to the research process from start to finish. So developing the research questions study conception and design, guiding and reviewing data analysis. So things like reviewing and confirming the qualitative themes, checking the accuracy of statistical analysis for quantitative studies, I also provided guidance and feedback related to writing up the dissertation and ensuring that the work was presented clearly and effectively. So one of my other roles is I'm a founding associate editor for the Journal of Occupational Therapy Education, and one of my tasks in this role is completing final copy editing prior to publication. So I do have an eye for ensuring that the content, clarity and format of research, you know, is appropriate for dissemination. Some other areas of mentorship have included guidance for presenting the dissertation publicly.

I provided support in other ways too, so I like to be very involved and very hands on. As a doctoral mentor, I actually attended all of Doctor Keener's educational intervention sessions and helped with pragmatic aspects of the sessions, like helping to set up for the day and distributing materials during the session. At one point, I was in sort of a waitressing role and helping to distribute food because these were lunch and learns. So again, I like to be really involved and supportive of my students. And Doctor Keener and I currently have several manuscripts in progress, with planned submissions soon to peer review journals to present the results of these studies. And we think and we hope they'll have a meaningful impact in the literature related to addressing health literacy with orthopedic clients.

MATT BRANDENBURG:
Absolutely. It absolutely sounds like they will be. And this research is so important in providing, you know, quality recommendations for people working with this population. Where could listeners find some of this research and some of the recommendations that we've discussed today?

RENEE CAUSEY-UPTON:
Well, so the research I've been collaborating on with Doctor Keener has not been published just yet, but hopefully, look for that that soon. Some of my research that I've mentioned, you know, is published and available. Several of my studies have been published in the Journal of Orthopedic Nursing. And because it does relate pretty closely to some of these other providers for which we collaborate. So some of the research has been published there, some has been published in the Internet Journal of Allied Health Sciences and Practice. And I also want to mention some other resources that may be helpful to individuals who are practicing in orthopedics, or who maybe want to transition to orthopedics. So, for example, AOTA has a continuing education course, occupational therapy for orthopedic recovery and acute care. And this is actually part of a larger micro-credential for acute care. So whether completed alone or as part of this broader credential, I think it's a really good resource for working with this population.

There are also practice guidelines for musculoskeletal conditions published through AOTA. That's another good resource. And these guidelines, you know, they include other diagnoses besides joint replacement. But there is still some focus on joint replacement as well. I'm going to mention a couple of other organizations that are outside of OT, but I do think are very helpful. So the American Academy of Orthopedic Surgeons, they have some free educational materials, patient handouts and also videos. So if you want to observe videos of different surgical approaches, you can do that there. And then the National Association of Orthopedic Nurses. So this is another great resource for continued learning. They have free podcasts available on a variety of orthopedic topics including TKR. They also have some free resources for patients. And occupational therapists can join. Even though we're not orthopedic nurses, we can still join NAON under their Rehab professional category, and you're able to access additional materials from there.

MATT BRANDENBURG:
That is wonderful. We will be sure to include links to these resources in the episode description, so our listeners can check those out. Renee, what have been some memorable or impactful moments that you've encountered during your career providing these interventions and mentoring students? What would you like to share with us?

RENEE CAUSEY-UPTON:
So I think there's both positive and negative patient experiences that stand out in my memory. So when a patient was unprepared for the pain they experienced post-surgery, or if they had unrealistic expectations related to recovery, these are some of the things that led me to want to research in this area and to describe what was currently happening in preoperative education programs. And certainly, I've had many positive experiences that stand out as well. So some patients have such high levels of pain before surgery that they have relief immediately after surgery. Even though they have surgical pain, some still report this as being less painful than their pre-surgery state. And these patients have such an immediate improvement in quality of life. That's just wonderful to see. And I think because their perception of pain reduction is so great, they're able to participate really well in therapy and realize strong outcomes. I can clearly see one client in my mind that still stands out to me.

So I mentioned previously that older age has been found to relate to poor outcomes, but we should never assume that this will be the case for all older adults. So one of my patients who was 80 plus, I can't remember their exact age, but she was able to dance before she even discharged from the hospital. And this was a valued occupation for this individual. I cannot recall any other patient, even younger ones, being so high functioning at the time of discharge. So I think that's one that I'll remember for a long time to come.

MATT BRANDENBURG:
That is a wonderful example. And, you know, maybe an indication for a future direction of research to study, you know, how dancing works as an intervention to prep for discharge.

RENEE CAUSEY-UPTON:
Yes, yes.

MATT BRANDENBURG:
Renee, this has been such a wonderful interview. I can't thank you enough for your time and for sharing all these recommendations. Are there any additional resources, you've already shared so many, that you'd like to recommend to our listeners?

RENEE CAUSEY-UPTON:
Something I would recommend, though, is especially related to preoperative education, if you're thinking about making changes to your own education program or you just want to learn what are other people doing out in the community, I mean, often, you can reach out to that facility and ask if you can observe their joint class. So that might be an option. So that's one thing I would recommend if you're considering changes. Something else I would recommend is just continuing to advocate for your role with orthopedic clients as an OT. So it might mean bringing evidence about OT and orthopedic populations to your facility to support expanding your role and increasing referrals. It might mean sharing your clinical expertise in this area by delivering continuing education courses or in-services, or maybe, it means conducting and disseminating research in this area. So OTs in clinical and academic settings should collaborate for scholarship related to joint replacement and discharge readiness.

We need to keep demonstrating our unique contributions to orthopedic rehabilitation and preoperative education. Because I think we absolutely do have something valuable to offer patients to better prepare them to complete their occupations after surgery that no other discipline can provide.

MATT BRANDENBURG:
I love that, I love that, Renee. We end each interview on this show with the Golden Nugget segment. And I want to ask you, Renee, if you could share one piece of advice or one last recommendation with our listeners, what would you say?

RENEE CAUSEY-UPTON:
For my golden nugget, I think I would say, never say never. Just because I'm thinking of my educational journey. And I think I thought when I was finished with my entry level education that I was done, you know. I'm sure everyone else has felt this way. It's a long journey. You're tired. You're ready to practice as an OT. But I wasn't out in practice long before I started having these types of clinical questions. And I thought, OK, maybe I can go back to school and maybe I can get a doctorate. And that was the path I took with my post-professional OTD. And then I decided to go that path again towards my PhD. I had a lot of good mentors along the way. I actually still currently get to work with some of the faculty who inspired me when I was completing my entry level education, and now they're my colleagues. You know, hold on to those good relationships and mentors and just just keep learning. It doesn't have to be formal education. It could be reading on your own. It could be observing another preoperative education program.

Or maybe it is coming back to school for another degree or completing a professional development activities within the profession. So just never say never because you never know what you're going to end up doing and just, yeah, keep learning and growing.

MATT BRANDENBURG:
I love that, and that is such a wonderful recommendation, a powerful and empowering piece of advice for our listeners. Renee, thank you again so much for being on the show today. It's really been a pleasure speaking with you.

RENEE CAUSEY-UPTON:
Thank you for the opportunity.

SPEAKER:
Thanks for listening to Everyday Evidence. Tune in next time for more evidence-based practice, insights and applications.