A Unique Approach to Increasing Patient Adherence through the use of Trackable Technology: A Case Report

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Introduction
Poor patient adherence is an ongoing concern of physical therapists when prescribing home exercise programs (HEPs) as they aim to encourage patient self-management of conditions and promote acceptance of responsibility for rehabilitation. It is estimated that nearly two-thirds of patients receiving HEPs from a physical therapist do not adhere to the program or perform exercises as prescribed due to a number of identified barriers. With the rates of non-adherence to medical recommendations being so prevalent, it is beneficial for physical therapists to implement new strategies to improve patient adherence and outcomes. Recent trends in healthcare have involved the use of trackable technology through software applications, such as mobile apps, as an alternative cost-effective and convenient method of issuing HEPs to promote and improve patient adherence.

Clinical Impression
- Patient presentation consistent with a tear of the medial meniscus of the right knee; positive for 4/5 criteria of cluster described by Lowery et al. (2006)
- Conservative physical therapy management of meniscal tears and knee arthroscopy have been found to have similar effectiveness for pain relief in active populations
- With patient’s primary goal to decrease pain to return to prior level of function, she was considered a good candidate for conservative management
- This patient was considered a good candidate for the intervention due to:
  - Prior high level of activity and having active wellness membership at PT clinic
  - Ability to achieve near-full ROM with minimal increase in pain
  - Desire to prevent high cost of in-person sessions
  - Literature demonstrating positive results with conservative management of meniscus tears

Intervention
- Mywellness® app is part of the Technogym® integrated online platforms, can be used by health professionals with Technogym equipment to prescribe efficient HEPs and deliver them to patients instantly via the cloud
- PTs can add/update exercises through the web-based portal and instantly get in touch with patients through the in-app chat feature
- Mywellness® app enables PTs to check the compliance of patients to prescribed HEPs through the individual’s daily task log

- The case patient’s plan of care: To be seen in-person sessions due to reasons of cost and support
- Mywellness® and video conference app for 20 sessions
- Edema anteriorly and along medial joint line of right knee
- Symmetry increase with functional movement, including stair ambulation, transfers, squatting and kneeling, limiting her ability to engage in physical activity such as yoga, low-intensity strength training and horseback riding
- PMH: osteoporosis, arthritis, breast and uterine cancer, receiving two bouts of radiation and in remission for 10 years
- Prior Tx: two corticosteroid injections to right knee
- Prior goal: to decrease pain and return to PLOF and physical activity
- Personal desire to limit number of in-person sessions due to paying out of pocket for services

Patient History/Systems Review
- 60 y.o. athletic female with four-month history of intermittent, sharp pain along medial joint line of right knee with occasional clicking sensations
- Symptoms increase with functional movement, including stair ambulation, transfers, squatting and kneeling, limiting her ability to engage in physical activity such as yoga, low-intensity strength training and horseback riding
- PMH: osteoporosis, arthritis, breast and uterine cancer, receiving two bouts of radiation and in remission for 10 years
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Examination
- Completed Boston University AM-PAC Generic Basic Mobility Outpatient Short Form: raw score 52
- Edema anteriorly and along medial joint line of right knee
- Restricted, painful AROM of right knee and pain and weakness noted with both right knee flexion and extension
- Positive McMurray, Apley, and Thessaly tests
- Able to perform 60% of deep squat but pain response

Discussion
- Based on patient outcomes and reported adherence levels, it can be suggested that the use of the Mywellness® app is successful in promoting patient adherence to HEPs and overcoming commonly perceived patient barriers
- Trackable technology acts as potential solution to limit high-cost of in-person PT sessions while achieving positive therapeutic outcomes
- Limitations of utilizing trackable technology apps include the patient’s responsibility to self-report adherence levels
- Future studies are needed to investigate use of trackable technology for monitoring and promoting patient adherence to HEPs to determine if there is a positive effect in a large population

References: See Handout with Reference List