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OUTPATIENT PAMPHLET INTERVENTION PROVIDING EVIDENCE-BASED STRETCHES AND EXERCISES FOR NON- SPECIFIC BACK PAIN

BY JASON LACH

ROTATION 8, 2022

PROBLEM AND NEED

- Over 85% of patients in primary care present with nonspecific low back pain, meaning they have back pain in the absence of an identified specific underlying condition (Knight 2022).
- First line therapy for non-specific back pain is physical therapy and conservative management (Knight 2022).
- Exercise and stretching has been shown to decrease lost workdays and improve disability in those with chronic and subacute back pain (Knight 2022).
- A pamphlet with evidence-driven exercises and stretches to relieve back pain would be helpful in the interim before patients can see PT and after so they can maintain core strength to prevent future back pain.

PUBLIC HEALTH COST

- One-fourth of working adults in the united states report experiencing low back pain within the previous three months (Becker 2019).
- Nearly 5% of all outpatient medical visits in the united states are for nonspecific low back pain (Becker 2019).
- Despite its prevalence, less than one-third of patients affected by low back pain will seek care from their family physicians (Becker 2019).
- Low back pain was the first cause of years of healthy life lost in the united states in 2016 (US 2018).
- As the US population continues to age, the burden of musculoskeletal disorders will increase. As a result, more US residents have neck and back pain, and the incidence of falls is increasing. These Musculoskeletal disorders are associated with a high medical cost (US 2018).

COMMUNITY PERSPECTIVE

- A physician at Newtown primary care and a patient at Newtown primary care were interviewed about Non-specific back pain and their thoughts on the usefulness of a pamphlet.
- Family medicine attending sees patient with non-specific back pain “Probably 5 times a week.” She believes the pamphlet “is useful!”
- Patient: “I had done PT before for my back, however that was years ago and I have forgotten some of the exercises. I will use it.”

INTERVENTION AND METHODOLOGY

- Patient's who come into Newtown primary care complaining acute or chronic pain that are diagnosed with non-specific back pain will be provided with a pamphlet providing stretches and core-exercises with instructions to improve back pain.
- Pamphlet was created with stretches and exercises used in a randomized control trial which showed significant improvement in both the core and stretching groups over 6 weeks (Kim 2020)
- Pamphlet was then shown to and approved of by a family medicine attending at Newtown primary care. Pamphlet provided to a patient complaining of non-specific back pain and immediate feedback was received.
- Feedback was also pursued from a few local PT offices, no response obtained.

STRETCHES FOR BACK PAIN RELIEF

01 HAMSTRING STRETCH



Lie down with your leg straightened out towards the ceiling using your other leg for balance, with a towel wrapped around your outstretched leg lightly pull towards your face for 30 seconds. Rest for 10 seconds repeat 3 times on both sides.

02 ILLIOPSOAS STRETCH

Lie on back, using your hands pull your knee into your chest and hold when you feel a stretch for 30 seconds. Rest for 10 seconds and repeat 3 times on both sides.



03 PIRIFORMIS STRETCH

Sit comfortably on the floor, straighten one leg and cross your other leg overtop with your foot flat on the floor. Twist your torso to bring the the arm of your outstretched leg past your knee and look behind you. Hold for 30 seconds. Rest for 10 seconds and repeat 3 times on both sides.



04 TENSOR FASCIA LATE STRETCH

Lie comfortably on your side using your lower leg for stability. Pull the higher leg with your higher arm so that your foot is towards your buttocks. Hold for 30 seconds and repeat 3 times on both sides.



EXERCISES FOR BACK PAIN RELIEF

01 SIDE BRIDGE



Lie on your side with your knees bent (or legs straight out if more advanced) using your forearm closer to the ground push yourself up supporting your weight, hold for 10 seconds. Repeat 3 times on each side.

02 SUPINE EXTENSION BRIDGE

Lie down on your back and bend your legs 90 degrees with your feet so you are supporting your weight with your feet hold for 10 seconds, repeat 3 times. If more advanced can extend one leg out.



03 STRAIGHT LEG RISE



Lie comfortably on your back. Rest one leg on the floor while lifting the other up as far as you are able make sure to keep your leg straight, hold for 10 seconds. Repeat 3x on each side.

04 PRONE BRIDGE

Lie on your stomach, using your knees (or toes if more advanced) use your forearms to push your body weight up. Focus on keeping your back straight. Hold for 10 seconds and repeat 3x.



05 WALKING WITH ABDOMINAL BRACING

While walking focus on having good posture with spine straight and chest up. For 10 second increments focus on tensing your core muscles (squeezing your abs). Rest for 15 seconds and repeat 3 times during the walk.



DISCLAIMER

Do exercises until you feel your core is fatigue do not over exert yourself or push yourself to pain. You should allow yourself at least 15 seconds of rest before repeating each exercise. You can advance to beyond 10 second holds do less.

Quick Links!

URLS FOR VIDEOS DEMONSTRATING STRETCHES AND EXERCISES!

STRETCHES

- 01 Hamstring: <https://bit.ly/3vg7Pb2>
- 02 Iliopsoas: <https://bit.ly/3BLV4q5>
- 03 Piriformis: <https://bit.ly/3t5yyof>
- 04 Tensor Fascia Late: <https://bit.ly/3HjvFFi>

EXERCISES

- 01 Side Bridge: <https://bit.ly/3574Hnk>
- 02 Supine Bridge: <https://bit.ly/35n50tV>
- 03 Straight Leg Raise: <https://bit.ly/3BRfMoh>
- 04 Prone Bridge: <https://bit.ly/36xVD1p>
- 05 Prone Bridge: <https://bit.ly/3soHlwX>

WHERE DO THESE RECOMMENDATIONS COME FROM?

A study of either core exercises or stretches that focus on same muscles as those outlined in this pamphlet showed significant improvement in patients back pain after 6 weeks. Participants either did core exercises for 30 minutes 3 times per week or stretches for 15 minutes 3 times a week. If you stick with these exercises or stretches (or ideally both!) You can expect to see improvement in a similar time frame!

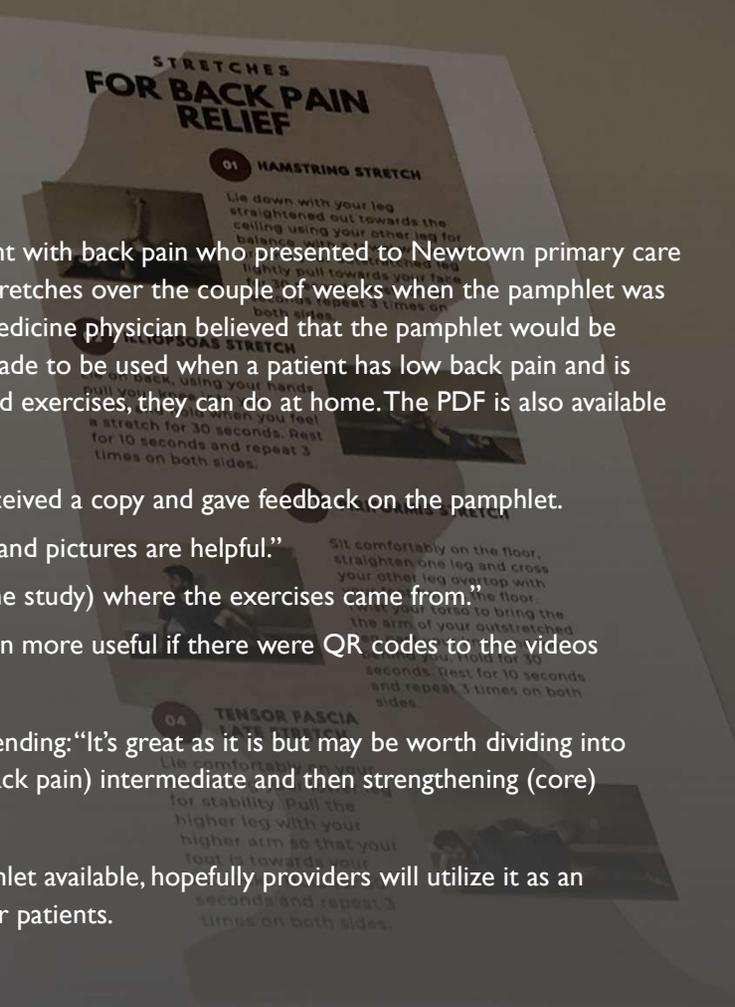
Kim B. Yim, Core Stability and Hip Exercises Improve Physical Function and Activity in Patients with Non-Specific Low Back Pain: A Randomized Controlled Trial. *Tohoku J Exp Med*. 2020 Jul;251(3):193-206. doi: 10.1620/tjem.251.193. PMID: 32669487.

LINK TO THE STUDY!
[HTTPS://BIT.LY/3SSKE4Z](https://bit.ly/3SSKE4Z)

Any questions or concerns?
Contact: Jason.lach@med.uvm.edu

RESULTS AND RESPONSE

- There were limited patient with back pain who presented to Newtown primary care that were interested in stretches over the couple of weeks when the pamphlet was available. As the family medicine physician believed that the pamphlet would be helpful. 35 copies were made to be used when a patient has low back pain and is interested in stretches and exercises, they can do at home. The PDF is also available to print more.
- From the patient who received a copy and gave feedback on the pamphlet.
 - “The descriptions and pictures are helpful.”
 - “It’s nice to see (the study) where the exercises came from.”
 - “It would have been more useful if there were QR codes to the videos instead of links”
- From family medicine attending: “It’s great as it is but may be worth dividing into gentle exercises (acute back pain) intermediate and then strengthening (core) exercises”.
- With copies of the pamphlet available, hopefully providers will utilize it as an informational resource for patients.



EVALUATION OF EFFECTIVENESS AND LIMITATIONS

- Not sufficient data to determine whether the pamphlet provided will be used by and helpful for the patients of Newtown primary care.
- The patient that received and gave feedback on the pamphlet did believe it to be a useful resource with helpful and clear information. And the family medicine physician “will be sure to use them.” However, without follow up it’s unclear whether the pamphlet helped him with his back pain or if there were obstacles to its usefulness.

RECOMMENDATIONS FOR FUTURE PROJECTS/INTERVENTIONS

- To have the pamphlet available for a longer time frame for more patients to have access to and give feedback on.
- Patient follow-up after pamphlet use to determine efficacy.
- Reorganizing the pamphlet into gentle exercises for acute back pain and core strengthening exercises for more chronic back pain.
- To expand into other areas of non-specific chronic musculoskeletal pain with pamphlets for leg, hip and neck pain.
- To provide data supported recommendations on OTC medication management for non-specific lower back pain.
- To receive pamphlet feedback from local Physical Therapists.
- Translate the pamphlet into multiple different languages.
- QR codes for easy access to videos.

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