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Promoting Healthy and Active lifestyles with Home Exercises in South Burlington, VT

Jonathan Gau MS3

March 2020

Primary Preceptor: Dr. Maloney (Colchester office)

Problem Identification

- In regards to obesity, while Vermont has consistently ranked well in the country (currently ranked 40th in the country with 27.6% of the population being obese), there has been a steady upward trend in the past two decades
 - A total 10% increase from 17% in 2000
 - In Chittendon County alone, a out 21% are obese
 - According to CDC, more than half of the state population at 57.7% is considered overweight.
- Heart disease is ranked as 2nd leading cause of death in Vermont since 2013
- Over 10% of VT adult population has diabetes
 - In the past year, diabetes increased 12%, from 8.2% to 10% in adults
 - 16,000 have diabetes and do not know
 - 35.7% have prediabetes
- 20.2% of Vermont's adults reported in last month, that they had not participated in any physical activity
 - With primary factors, not limited to, but including weather limitations, gym membership expense, intimidation of joining a gym, and lack of time.
 - Exposes a need to provide patients with health literacy regarding alternative options of exercise that is not limited by winter weather and expense of gym equipment.

Public Health Cost

- Vermont ranks 12th highest in nation in terms of healthcare spending per person at \$6,103
 - According to the American Diabetes Association, diabetes and prediabetes cost estimated \$543 million in Vermont each year
- Vermont average spending of \$700.5 million per year on pharmaceuticals with large percentage of spending localized around blood pressure medications/statins

Community Perspective

- Community Interviewees:
 - Ben Dorr, Studio Manager at Orange Theory Fitness, Burlington, VT
 - Nicole Williams MS, ACSM EP-C, Director of The Edge Preventative Care
- Takeaways from the interviews
 - Initial visit surveys are taken to understand basic medical questions to help determine if special attention/modifications need to be made.
 - Common barriers to joining a gym tend to be lack of time and finances
 - Other than in-house sessions, no in home exercises/tips given as it is out of their scope.

Intervention and Methodology

- Brochure that provides bodyweight exercises that can be done at home without substantial equipment.
 - Exercises will be separated by difficulty level in order to be modified to each person's specific capabilities/limitations
 - Basic information will be provided in the brochure on how to perform each exercise, if needed
 - Will give recommendation on how to utilize exercises to create individualized workout plans
 - Recommend how often to perform workouts each week.
 - Also provide additional hints/suggestions on how to achieve best results with the exercises given.
- Make brochures accessible to patients in the waiting room, as well as in patient rooms during visit
- Determine effectiveness of brochure through follow up with patients as well as inquiring office physicians about how often they distribute the brochure and how it is received by patients.

Results

- ▶ Created a brochure that provides easy-to-read, clear categories of beginner/intermediate/advanced home exercises for each muscle group. Also provides instructions on how to perform each exercise.
- ▶ Physicians and staff at South Burlington Family Medicine Office viewed the brochure positively and believed that it would be beneficial to provide patients.
- ▶ Staff appreciated the fact that it is a convenient and simple way to provide patients with a tangible source of information on exercise that can be given in-visit



You don't need a gym!

Whether you prefer the convenience of staying home, saving money/time, or you just aren't a gym person, at-home workouts can provide a great way of maintaining or promoting a healthy active lifestyle. And you don't necessarily need weights! In fact, bodyweight exercises are designed to involve multiple muscle groups, while effectively raising your heart rate and helping to burn calories.

Included in this brochure are just a few examples of home exercises that anyone can start with at anytime, anywhere. And the best part is that your home workouts can be easily modified to meet each person's specific needs and with a little creativity, the potential variations to these exercises are limitless!

To start, try creating a workout circuit by choosing one exercise from each muscle group, and complete 10 sets each exercise for 3-4 rounds at least 3x/week. Feel free to go up or down on intensity based on your comfortability level!

Warmup

Before any workout, it is important to begin with a warmup to reduce risk of injury. Start with a simple 5 minute walk/jog in place, and 5 minutes of stretching.

Beginner Exercises

Chest: Pushups are great upper body exercises to target the chest, shoulders, and triceps. Start with easier variations and progress to standard pushups.

- **Knee pushups:** Only knees on ground
- **Wall pushups:** Face wall with palms at shoulder height and shoulder width apart

Back:

- **Bridge exercise** (targets back, glutes and abs): lie on back with arms at side, knees bent, and feet flat on the floor. Push through heels and raise your bottom off the floor until hips are fully flexed.

Arms:

- **Bicep curls**
- **Triceps extensions:** Can be done sitting or standing
- **TIP:** if you don't have free weights/resistance bands, use any weighted object you have at home!

Core:

- **Forearm plank:** Only forearms should be touching the floor, with elbows directly under shoulders. Keep lower back straight and core tight.
- **Sit-Ups**

Legs:

- **Chair squat:** Stand in front of a chair with feet shoulder width apart and toes pointed outwards. Bend at your knees until bottom touches chair, with back straight. If comfortable, try without the chair.
- **Stationary Lunge:** Front foot should be flat on ground, and back foot should be up on toes. Bend your knees until front thigh is parallel to the floor. Can also be done in reverse or lateral variations.

Intermediate Exercises

Chest:

- **Incline Pushups:** Using a raised surface (chair, stairs, etc.), get in pushup position with upper body higher than lower body, or vice versa.

Back:

- **Superman:** Lie on stomach with arms and legs extended. Raise both arms and legs up simultaneously as high as possible. Hold for 1 sec and squeeze shoulder blades. Return to starting position.

Arms:

- **Triceps Dip:** Start with Bent-Knee dips from the floor. As you get comfortable, progress to straight-leg dips using a raised surface (chair, bench, etc.)

Core:

- **Standard Planks:** Only palms and toes touching floor
- **Russian twist:** Balancing only on tailbone, lift your feet off the floor with knees bent. Using abdominals, twist your core to the right and left, while keeping legs as still as possible.

Legs:

- **Walking lunge:** Adding movement to lunges will help improve stability and balance
- **Wall sits**

Advanced Exercises

Chest: Advanced variations of pushups

- **Diamond Pushups:** Larger emphasis on triceps
- **Archer Pushups:** Place arms wider than shoulder width and bend towards one side with opposite arm straight.
- **Clap Pushups**

Back:

- **Bird Dog pose:** Get on all fours with palms and knees touching the ground. Extend your arm forward and opposite leg backward while keeping your body as parallel to floor as possible. Repeat on other side.
- To increase difficulty, start in plank form with only palms and toes touching the ground

Arms:

- **Advanced Dips:** Balance between two chairs, with feet on one and hands on the other. Lower yourself until elbows at 90 degrees.

Core:

- **V-ups:** Lie on back, and while keeping arms/legs extended, bring them together to the middle of your body, and then let your torso fall back down.
- Increase difficulty by holding weighted object.

Legs:

- **Jumping Lunges:** Using same lunge technique, jump in air and alternate forward foot before landing
- **Single leg deadlift:** Standing hip width apart, bend forward at hip, shifting all your weight onto one leg, while extending the opposite leg backwards.



Evaluation of effectiveness

- Encourage in-visit distribution of brochures to patients for which it would be beneficial (high blood pressure, diabetes/prediabetes, overweight/obesity, hx of CAD/CVD). This would allow physicians to make record of who received brochure and see whether there are significant changes in lipids/BMI/blood pressure during f/u visits
- Include in check-in surveys questions on whether patient has received brochure before and whether they tried the exercises provided
 - If yes, then provide patient with separate survey to determine satisfaction and degree of benefit
- In regard to distribution in waiting rooms, assess utility of brochure by following how many brochures were taken at the end of each day.

Limitations

- Does not provide alternatives for patients who may be wheelchair bound or otherwise physically disabled
- Limited exercises provided, which may in turn limit its effect on long term health benefits.
- At first glance, may appear wordy and discourage patients from reading
- Patients are unaware of brochures in the waiting room
- Not available in different languages

Future Project Recommendations

- Given that about 26% of VT population has a disability and about 36% are inactive due to a disability, it would be beneficial to include alternative exercises for patients who are wheelchair-bound or physically disabled. For example, including exercises that can be done with resistance bands, or those that can be done sitting.
- Include cardio workouts that would more likely be beneficial to patients with heart disease.
- Suggest diet plans that can be implemented in conjunction with home exercises, because exercise alone is less effective for weight loss.
- Partner with local gyms to create more comprehensive and in-depth exercise routines

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