Strategies to Manage and Prevent Lower Back Pain in College Students

Onique Bryson
Northern Illinois University

Follow this and additional works at: https://huskiecommons.lib.niu.edu/studentengagement-honorscapstones

Part of the Physical Therapy Commons, and the Physiotherapy Commons

Recommended Citation
https://huskiecommons.lib.niu.edu/studentengagement-honorscapstones/1463

This Student Project is brought to you for free and open access by the Undergraduate Research & Artistry at Huskie Commons. It has been accepted for inclusion in Honors Capstones by an authorized administrator of Huskie Commons. For more information, please contact jschumacher@niu.edu.
NORTHERN ILLINOIS UNIVERSITY

Strategies to Manage and Prevent Lower Back Pain in College Students

A Capstone Submitted to the

University Honors Program

In Partial Fulfillment of the

Requirements of the Baccalaureate Degree

With Honors

Department Of

College of Health and Human Sciences

By

Onique Bryson

DeKalb, Illinois

May 13, 2023
Abstract

Many young adults who are in college often struggle with maintaining their physical well-being and thus encounter severe-moderate lower back pain (LBP). In this project, a research development plan was created that will test the effectiveness of utilizing physical therapy (PT) to treat and or prevent LBP. The scope includes using standard PT techniques to evaluate students who may be struggling with LBP and teach them different measures to help themselves. The limit of the project is that the hypothesis will only be tested on Northern Illinois University (NIU) students, so results may vary for larger populations. A survey will be carried out to test results and the data will be analyzed to show how LBP affects students, if they would be willing to try PT, and if PT was successful after some time has passed. The significance of this work is extremely important in the physical therapy field because there will be further exposure, more people will receive help and it will be beneficial for future research.

Introduction

Lower back pain is defined as any feeling of discomfort, or pain that we feel in the lumbar region of our backs for an extended period. It can lead to disability and will hinder people from completing their daily tasks. It becomes more prevalent as we get older especially if it was not treated from an earlier onset. It "is the leading cause of activity limitation and work absence throughout much of the world, imposing a high economic burden on individuals, families, communities, industry and governments” (Nagaraj BN, 2021). In college students, some of the main causes of LBP include not being physically active, bad seating ergonomics, and avoiding early symptoms. This leads to the study hypothesis which states that if college students are unaware of their body mechanics, they are more likely to ignore their lower back pain instead of
seeking proper treatment. When conducting the research, the aim is to help students become aware of the numerous treatment options involved in PT.

**Methods**

In this project, the foundation for a research development plan that focuses on helping college students with lower back pain will be set. The research question is, how effective is physical therapy in treating lower back pain for college students? The data-collecting process of this research will be done via a survey. The first step would be to get approval from the Institutional Review Board (IRB) at NIU, then subjects would be chosen. Criteria for participation include being an NIU student between the ages 18-25 years. There will be no special inclusions that grant access to completing this survey, except being a student within the age requirement above who may or may not have experienced LBP. Some of the questions that will be asked via survey are:

1. What do you think is the cause of your lower back pain?
2. Do you think physical therapy could assist with this pain?
3. How many hours do you spend on your phone?
4. Are you aware of how different areas in your body function?
5. Are you physically active?
6. Did physical therapy help after receiving treatment?
7. Will you continue to take measures to help yourself when this study is complete?

In addition to asking these questions, the standard measuring approach for lower back pain in physical therapy will be utilized. For example, testing the student’s back extensor muscle strength. Actual measurements from students which will be vital in answering the research question will be taken. Students will be able to receive a PT screening. If they proceed with PT, they will be reassessed every four weeks for 4 months to test the effectiveness. Data will be
analyzed by acknowledging if PT was successful in helping college students with lower back pain.

Further in this project, a literature review was done to analyze a few of the studies that have already been done to help college students. In the future, these articles will be useful for further research.

**Literature Review**

**Lower Back Pain Prevalence**

For many, college is a very difficult period that involves life-changing aspects. A lot of students are trying to navigate their courses, their schedules, social life, and extracurricular activities. This major shift causes many students to lose focus of their physical health. Thus, many students will not realize that something is wrong with them until they are in excruciating pain. That is often the case with college students and LBP. In a study done by Morais et al., (2018), 410 college students were part of a study that shows how many of them were affected. The results show that “the prevalence of LBP was 56.3%.” Of that, only “8% went to see a professional and 14.9% could not continue their daily activities” (Morais et al., 2018).

This data shows that only a small number of students seek help for the pain they are experiencing. There are many social factors that come into play when looking at the initial stages of what causes LBP. The authors looked at their socioeconomic class, gender, age, occupation, physical activity, and year in college. Majority of the students who expressed a concern for LBP were females. Ferreria et al., as cited in Morais et al., 2018 states that the reason why females have a higher risk factor is because they normally have more at-home chores that place a great amount of stress on their bodies which they have to do constantly. Another important factor that comes
into play is the female anatomy which is very useful to note when participating in physical therapy. “They include lower stature, lower muscle mass, lower bone mass, more fragile joints and less adapted to physical exertion, greater fat weight. [All of which are] linked to the modulation of the nervous system, which may contribute to the onset and greater intensity of pain” (Morais et al., 2018). Considering these factors, research proves that a lot of college students need some form of assistance with how they manage pain.

Further in this study, there seemed to be a cause-and-effect scenario that occurs between the amount of work a student has to do and how many contribute to LBP. The authors stated that because students are busy, they will pay less attention to their physical health. However, with LBP, a person’s quality of life [will] “consequently cause a poorer academic performance, since the year of the course contributes to the onset of problems that affect the lumbar spine.” In offering a solution to alleviate these problems, more work needs to be done to “promote health” and lessen the amount of pain these students face (Morais et al., 2018).

Online Care for Low Back Pain in Young Adults

According to Shebib et al. (2019), “LBP is the leading cause of disability throughout the world and is economically burdensome.” For treating this, they recommend “non-invasive care” such as an online program that helps patients within the comforts of their own homes. The researchers in this study performed a twelve-week trial to see if there would be any improvements in a person’s condition after utilizing "sensor-guided exercise therapy, education, cognitive behavioral coaching, activity tracking, and symptom tracking – all administered remotely via an app" (Shebib et al., 2019). With LBP being so prevalent, many studies try different interventions to see which is most successful. With rising healthcare costs, medical professionals often recommend physical therapy along with medication. In extreme scenarios,
surgery may be done. Researchers state that people are more likely to seek care if the means are straightforward and time efficient. In this study, we can see how using a digital platform will or will not help LBP patients.

Authors from this study used “self-regulatory tools such as biofeedback” because it provides patients with an easy platform to track their symptoms, their progress and to receive direct feedback from their caregivers without needing to make an in-person clinic appointment (Shebib et al., 2019). Seeing that we are now a technology driven society, a method like this would be effective when helping college students. If students could be persuaded that early intervention for their pain will prevent them from doing surgery in the long run, then they will be more willing to participate. Based on the results of this study, an effective program like this helped the patients to cease the use of opioids because they had a non-invasive treatment such as doing their home exercises and working with their therapists (Shebib et al., 2019).

**Mental Health and Chronic Low Back Pain**

In an effort to properly reduce the number of students who suffer from mental health problems, we must first analyze additional factors that contribute. Mei et al., (2019) states that in addition to “heavy social pressure […] students often encounter psychological problems such as depression, anxiety, and interpersonal sensitivity. However, a poor mental state is also a contributing factor to the development of and recovery from LBP” in young adults. This is not a surprising fact because often the different components of our health will go hand in hand with each other. For example, a person who may be experiencing trauma because of chronic pain may not have a stable mental status because they feel pressured.
In this study done in China, there were over 10,000 questionaries that were given to college students to see how many of them were suffering from chronic LBP. Some key statistics that stood out are there were “3949 males and 4715 females, about 26.62% of that population suffered from chronic low back pain. An explanation for this difference in females can be due to “physiological changes in the menstrual cycle, a lack of muscle strength which often leads to improper sitting postures [and] primary dysmenorrhea. [Also] “women are more susceptible than men to adverse emotions and are more likely to experience pain,” which helps us further understand why LBP may occur based on sex differentiation (Mei et al., 2019). The different areas of study also had an impact. For example, agricultural students had the highest prevalence of chronic LBP (39.47%), meanwhile, engineering students had the lowest, (23.94%), (Mei et al., 2019). Furthermore, they looked further at the prevalence and the year of study. Consequently, “doctoral students had the highest prevalence of chronic LBP, that is 40.48%” which may be due to the amount of learning expectations they have.

There were also direct and indirect factors that contributed to a student's mental health and their LBP. The direct examples provided are “depressive symptoms, anxiety, coercion, paranoia, and interpersonal sensitivity.” These factors are critical when trying to see the connection between the two. On the other hand, the indirect factors were "campus life experiences, learning stress, and interpersonal relationships" which as we can imagine occupy a lot of time in a college student's mind (Mei et al., 2019). With the indirect factors, researchers saw how some students had an association with drug use that further contributed to the excruciating symptoms of LBP. Knowing the importance of rest, LBP affected “sleep quality […] and increased insomnia" among the students. Taking all these factors into consideration shows how the scope of taking care of one’s mental health is significantly reduced when
suffering from LBP. It also reflects that the mental and physical health of students are often placed last when thinking about fulfilling their educational goals.

**Conclusion**

To conclude, the prevalence of LBP has been increasing and it will get worse if students aren’t allowed to get help. Research has shown that using PT is effective in treating and developing problems with LBP. If more college students are aware of how PT and being active will assist them, then the likeliness of further LBP will be decreased.
References


https://doi.org/10.22271/ortho.2021.v7.i1g.2521


https://doi.org/10.5935/2595-0118.20180047