

**A critical appraisal of: Exercise, education, manual-therapy and
taping compared to education for patellofemoral osteoarthritis: a
blinded, randomized clinical trial**

By

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Abstract

Those that struggle with knee problems such as patellofemoral joint osteoarthritis (PFJ OA) are very prevalent in our society today, and because of this, research has been performed in order to find out what the most effective intervention could be used to treat these types of patients. In this article's randomized clinical trials, two groups exhibiting PFJ OA symptoms were given different types of treatment in order to determine what the most optimal method of treatment was. The first group was given a combination of manual therapy, PFJ targeted exercises, education, as well as taping while the second group was to only receive PFJ OA education. The duration of the treatment lasted over a span of 9 months, and the first check up measurements were taken at the 3-month mark and the last checkup was taken at the 9-month mark. The results first showed at the 3-month follow up that the first group using a combination of treatment tools had a much higher result of improvement with their PFJ OA symptoms when compared to the second group that only performed PFJ OA education. However, at the 9-month checkup, the results in terms of the number of patients who had improved symptoms remained the same when compared to the 3-month checkup. In conclusion, the combination of exercise, education, manual-therapy, and taping can be used overusing PFJ OA education alone to improve short-term patient change in PFJ OA symptoms and that these short-term effects should exhibit the same results when performed over a longer period of time.

Key words:

Patellofemoral joint osteoarthritis (PFJ OA), Manual Therapy, PFJ Education

Introduction

The growth in population for those that struggle with knee problems has been a major area of focus for healthcare treatment, and one of the most prominent types of knee problems that many of these people struggle with is PFJ OA. There have previously been many different types of interventions used when treating patients with PFJ OA and finding out what the most optimal intervention is something that can be very critical in advancing the healthcare field. Common interventions used to treat PFJ OA patients are manual therapy, taping, PFJ OA education, and PFJ directed exercises. Some also may argue that using them in combination with one another may prove to be more effective than using them individually. This leads to the clinical question of whether using a combination of treatment methods such as exercise, manual therapy, education, and taping, is more effective for treating PFJ OA patients when compared to using education alone.

Methods

The search process for an article that could potentially answer the clinical question started with using the Pub Med database. The search terms and keywords used when looking for the specific article were Patellofemoral pain, knee pain, PFJ OA treatment, manual therapy, and PFJ exercises. Limits that were placed on the search were free full text, full text, clinical trials, and 10 years for publication date. These limits were placed in order to narrow down the types of studies done to ones that were more recent, as well as ones that were fully accessible for a well-done clinical appraisal. In terms of exclusion and inclusion, the search was not limited to a specific population. The tested subjects were only required to exhibit symptoms of PFJ pain.

Once the search was performed, around 20 hits were found before beginning to review the articles.

The chosen performed study was aimed at treating patients that struggled with PFJ OA on a daily basis, and the specific purpose of the study was to compare the effectiveness of two treatment methods of using either a combination of manual therapy, education, taping, and exercises, or just using education alone. The source of the journal came from the Osteoarthritis research society international (OARSI), and the research location was based in Victoria, Australia. The journal was posted in the year of 2015 and some of the authors included were K.M. Crosley, B. Vicenzino, and J. Lentzos. All of the authors were associated with being a part of either the physiotherapy school of health and rehabilitation sciences at the University of Queensland, the department of mechanical engineering at the University of Melbourne, or the school of allied health college of science at La Trobe University in Victoria, Australia. Some reasons for why this study was chosen among all the reviewed articles for the critical appraisal were due to a couple of factors. The first factor was that the subjects and clinicians were both blinded to the subjects group assignments, the second factor was that there was a follow-up data collection on the participants for the study, and the third factor was that the instruments and methods used to measure the outcomes for the study were reliable tools.

Results

Summary of the study

The given study performed was aimed at treating patients that struggled with patellofemoral joint osteoarthritis (PFJ OA) on a daily basis. The specific purpose of this study was to compare the effectiveness of two treatment methods of using either a combination of manual therapy, education, taping, and exercise, or just using education alone. In order to assess this experiment, a double blinded randomized clinical trial was used. The criteria for the participants in this experiment were those that were screened to have symptomatic and radiographic PFJ OA. In conclusion, manual-therapy, taping, exercise and education were shown to be more effective than education alone in the short-term, however, there were no differences in improvement over a longer period of time.

Appraisal of the study introduction

The strengths of the introduction for this study come from how it was comprehensive in providing sufficient background information about the given problem at hand as well as the type of intervention that will be used for the experiment. The introduction was also able to demonstrate clearly that the independent variables were the types of interventions used such as the combination of exercises or the intervention of using education alone to treat PFJ OA, and that the dependent variable was the amount of improvement the patients had in regards to their PFJ OA symptoms.

Some weaknesses of this introduction were that the author did not go into enough detail over the combination of interventions being used and what the individual effects they each had on patients in the past. This would have been helpful information in determining what we should expect to see when all of them would be used on a patient together.

Appraisal of the study methods

Strengths of the study methods section for this clinical trial would be that the study was a randomized clinical trial and that the participants and the assessors were both blinded. The groups also had similar sociodemographic, clinical, and prognostic characteristics at the start of the study, and this was discovered through the screening performed at the beginning. The two treatment groups had similar types of participants, which makes the effects of the treatments easier to compare to one another.

Weaknesses of the study methods sections for this clinical trial were that although the interventions were described well, more detail was still needed in order to replicate the exact experiment. From a physical therapist standpoint, a PT that is proficient in manual therapy, prescribing PFJ exercises, giving education, and also taping would be able to treat patients using these types of modalities, however, we do not know how the assessors in this clinical trial specifically performed these treatment types so this makes it very difficult to replicate precisely.

Appraisal of the study results

Strengths of the result section for this clinical study were that the section was written in an organized and clear matter since it addressed the outcomes of the two groups that were experimented on with values regarding their PFJ OA symptoms being presented and compared to one another. The study also gave a 9-month follow up test that was later performed during the case study, and this adds more to the final results of this study. The results were presented in the same order as the research questions as it answers by telling the viewers the type of improvement each patient had or if they had none at all. Tables, charts, and graphs were also implemented in

order to visually guide the audience which was very helpful in identifying important numbers that contributed to the concluded results of the study.

The main weakness of the results section was that there was little in respect to how clinically significant the improvements of the experimental group outcomes were. Specific scales were used in order to test these outcome measures, but from an unbiased standpoint, it would be difficult to decipher whether the results for the treatment groups were actually clinically relevant or if they made an improvement that was meaningful.

Appraisal of the study discussion

Strengths of the discussion section for this clinical study were that the authors were able to talk about the significance of PFJ OA in society and how it was important to use non-pharmacological approach in treating those that struggle with this. They also discussed how the study had a good number of important strengths that supported the use of the combination of exercise, manual therapy, taping and education to treat PFJ OA which could be later implemented in treatment programs for future patients.

Weaknesses of the discussion section for this clinical study were that there was a limitation placed due to the number of dropout participants that did not return for the 9-month checkup, and this was an important aspect of the study since the study had a portion of it comparing the short-term and long-term effects for the given treatment types. The authors were also able to mention that the study was performed under modern clinical guidelines for PFJ OA treatment, however they did not mention or compare this study to other literatures within the end discussion section.

Discussion

The study performed is clinically significant since it compares two interventions that are commonly used in treating PFJ OA, which is a prominent problem for many people. This study can also be used to help answer the given clinical question since it highlights the pros and cons of the two methods of using either a combination of PFJ OA treatment methods or just using PFJ OA education alone for treatment.

From the results given from the study, there is a strong argument in favor of using the given intervention appraised of utilizing a combination of PFJ OA treatment interventions instead of only using the education treatment alone. With 20/44 patients reporting much more improvement in their symptoms for the combination treatment group versus 5/48 reporting the same for the education treatment group at the 3-month check up mark, one can see that the use of this combination PFJ OA intervention may be more effective in treating these types of patients. What could further improve this argument would be the implementation of graphs or charts indicating the significant values of improvement for the patients through whichever scales the assessors were using. This would further help the audience relate the results to more of a clinical application perspective, which would then have a stronger of an impact on the reader.

The re-application for this study would be a little tricky since more detail is needed within the methods to reproduce the same results. The methods mentioned involve the type of treatment being performed, but from an un-experienced standpoint, I cannot say that I would be confident enough to implement this intervention safely and appropriately in a clinical setting. However, someone that has had more experience treating patients and working as a physical therapist may be more confident to do so.

Overall, the findings of this research were very interesting in that the method of using the combination of manual therapy, PFJ OA exercises, taping, and education was shown to be more effective than just using PFJ OA education alone. The results that primarily contributed to this conclusion were taken at the 3-month mark, which also leads us to understand that there were no significant differences between the short-term treatment and the long-term treatment. The study could have been more effective if it had implemented graphs or charts stating the statistical significance of the given test values since this would have allowed the audience to clearly see if the results were clinically applicable to the majority of people that struggle with PFJ OA, however the study was still ultimately presented well through how it was organized.