

Effect of Escape Pain Programme on Activities of Daily Living and Anxiety in Osteoarthritis of Knee

Nakka Baby¹, N. Rama Tulasi¹

Visakha Academy of Paramedical Sciences college of Physiotherapy, Department of Physiotherapy, Vishakhapatnam, Andhra Pradesh, India

Abstract: ***Objective:** To understand the effect on activities of daily living and on level of anxiety in patients suffering from osteoarthritis of knee upon participating in an integrated exercise-based rehabilitation programme - Enabling Self-management and Coping with Arthritis knee Pain through Exercise, ESCAPE-knee pain. **Design:** Experimental. **Method:** The present study was approved by the institutional ethics committee Andhra Medical college; prior the study was conducted consents forms of both local and English were provided with patients participated in this study. The sample size of 30 participants were taken into the study whom initial assessment of Hamilton anxiety scale was assessed following that the outcome scales were measured pre and post the intervention. The intervention named is ESCAPE-knee pain programme, in which exercise and educational components are included, the exercise components have a varied number of range of exercises coping for knee arthritis while the educational component helps to educate individuals regarding various aspects in arthritis, post the intervention the effect on this intervention on activity of daily living along with anxiety are measured through outcome scales. **Results:** After the completion of intervention for 6 weeks, it was found that the programme showed a good significance in improving the activities of daily livings along with improving the anxiety using the programme. The patients had better understanding of how essential is to include exercises as a portion of medicine in order to attain better in their condition in terms of strength and ability to train muscles for stability, also the educational component dealt improvised patient behaviour towards their myths and negative thoughts to positive ways. Hence, ESCAPE-knee pain programme had confirmed that it effects in a valuable way when applied to patients suffering from OA knee.*

Ethics reg: EC/NEW/INST/2019/397.

Keywords: ESCAPE-knee pain, Activities of daily life, Anxiety

1. Background

Osteoarthritis deals with non-inflammatory degenerative of bones leading to progressive deterioration of articular cartilage between them. Osteoarthritis is the second most common problem in India, mostly affecting the elderly population¹.

It is well established that Osteoarthritis leads to pain, swelling and stiffness that makes individuals perform simple activities of daily living like walking, tucking bed sheets, mobilizing around toilets, climbing stairs difficult and increases the dependency². OA can contribute to inactivity with ageing, secondary to pain and reduced function, thus ultimately impairing quality of life.

Knee osteoarthritis shows symptoms ranging from physical to psychological aspects i.e.; may it be swelling and joint stiffness to effecting daily household chores like toileting, cooking, gardening, bathing, walking³.

The symptoms such as most obvious like pain which initially appeared during work for long time duration at initial stages at joint or surrounding joint structures may become aggressive and become severe that it may start appear at rest. Psychological disturbances like lack of sleep may lead to fatigue and restlessness⁴.

After suffering with so much pain and loss of functionality, patients have stated that they have been suffering from psychological co factors like stress, depression, anxiety and other states of loss of peace within them. Some studies showed that the psychological co factors like stress, fear, loss of self-called anxiety may affect individual ADL'S⁵.

It can be seen that suffering from pain often can cause anxiety and stress in individuals. When such instance happens patients who are already panicked because of the orthopaedic condition like OA knee, pain on addition causes both fear and stress leading to poor functions⁵. Individuals been diagnosed with most chronic cases oftentimes reported fear and anxiousness on regular bases⁶. On a continuation many patients felt more pain upon such feelings⁷. Studies also reported that severe pain can affect depression and other co morbidities⁸. several studies also claimed the relationship between pain and anxious and work.

A lot of management has come up in order to treat individual morbidity but in the present study we aimed to treat both activities of daily living and anxiety levels in osteoarthritis of the knee through an integrated exercise-based programme called ESCAPE-knee pain programme.

Method:

Study design:

This study was an experimental type design.

Participants:

The patients suffering from knee osteoarthritis for more than 6 months were recruited from VAPMS College Of Physiotherapy outpatient department and King George Hospital physiotherapy department, Visakhapatnam. They were identified based on general medical records along with clinical diagnosis. An appeal form for participating in the study were provided in the department, patients

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included in the study are of age from 40-70 years, having acute knee pain irrespective of the side involved and both the genders were equally welcomed. Patients were excluded from the study who had undergone a history of Arthroplasty, any intra-articular injections or any unstable medical conditions like systems involved such as cardiac, neurological and respiratory.

The number of patients approached to be part of this programme were higher in number, however after meeting the inclusion criteria, the sample number was quite limited compared to the number approached. The main inclusive criteria are patients were interviewed with an initial anxiety scale, in which the Patients has to obtain a score with Hamelton anxiety scale of mild to moderate severity (18-24). This was taken as an initial measure in order to filtrate patients who are actually suffering from anxiety than any other disorder.

After completion of all the necessary information, the patients' normal demographic details were recorded, following that the consent form was obtained.

The outcomes were measured with the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and Hospital Anxiety and Depression scale (HAD). The WOMAC scale has three subscales measures for pain, stiffness and physical function. The pain scale is for 5 items scoring from 0 to 4, stiffness measures for two items and physical function for 17 items. The whole scores for 96. The higher to score the severe the pain is about. The HAD scales two forms for anxiety and depression. The anxiety scales were taken and has 14 questions in it scoring from 0 to 3 the total score is for 2, lower score lower the anxiety level and vice versa. Both scales are interviewed by therapist to patient and been filled Infront of them. All the 30 participants were clouded together and were given the same exercise regime in order to understand their beliefs, pain level and anxiety levels. The whole study was conducted in a two months period.

The rehabilitation programme:

The integrated based rehabilitation programme involved in the present study is ESCAPE-Knee pain programme. The ESCAPE pain programme stands out for **Enabling Self-management and Coping with Arthritic (knee) Pain using Exercise.**

This programme is a composition of educational self-management and coping strategies for people with arthritis with an exercise regimen. The duration of the study was for 6 weeks hence both sessions were calculated equally i.e.; six sessions of each component was planned each session of both components covering in a week was made sure and also each session lasted about 15 minutes. The exercise sessions planned accordingly to patient demand of condition that included with muscles training with strength and balance.

The whole aim for inclusion of this programme was to cope up activities of daily living and to decrease stress level after participating in this programme.

Exercise Component:

The exercise sessions planned were based on the condition of the patients through pre assessments. The intensity and frequency were determined based on the needs of the participants during the session. The patients were taught all the exercise activities to practice at home. Exercises included in the program are Exercise bike, Quadriceps bench, standing on leg, Thera-band, sit to stand, Step ups, Step downs, Wall squats, Heel slides, Knee wedges, Foot alphabet, Shuttle walks.

Educational Component:

The Initial class addresses patients and explains them briefs about the programme. Followed by the day the therapist will explain the plan for next sessions. The educational sessions are mainly concentrates on how to build trust and confidence between the therapist and patients. The sessions covered in the programme includes topics like drug management, myths and believes, diet and lifestyle, seeing the other side of pain, coping activities, believing on one self, pathology under condition, exercise and pain.

Data analysis:

The data was collected and documented for initial scores of WOMAC AND HAD scales before and after and is mentioned in Table 1.0. After obtaining the scores, the paired "t" test was calculated using the help of SPSS software which are mentioned in table respectively and are given in table 1.1 and 1.2.

Table 1: The detail information about pre and pos scores of WOMAC and HAD.

SERIAL NO.	AGE/GENER	WOMAC PRE %	WOMAC POS %	HAD PRE	HAD POS
1	49/M	94.7	91.6	17	15
2	60/F	93.7	92.7	11	10
3	65/M	89.5	87.5	9	8
4	64/F	93.7	92.7	13	11
5	60/F	95.8	94.7	9	7
6	48/F	92.7	88.5	12	11
7	58/M	94.7	93.7	12	10
8	48/M	90.6	88.5	11	9
9	43/F	86.4	83.3	10	9
10	50/F	87.5	85.4	15	14
11	44/F	87.5	84.3	9	8
12	49/M	91.6	90.6	9	7
13	64/F	93.7	92.7	9	8
14	53/F	89.5	88.5	8	6
15	50/F	88.5	86.4	11	10
16	51/M	92.7	90.6	15	13
17	51/M	82.2	81.2	12	10
18	63/M	86.4	85.4	8	7
19	64/F	89.5	88.5	10	9
20	60/F	85.4	82.2	12	11
21	48/F	94.7	93.7	12	10
22	58/M	89.5	84.3	8	7
23	48/M	88.5	86.4	8	6
24	43/F	92.7	89.5	13	11

25	50/F	90.6	88.5	14	12
26	44/F	96.8	95.8	13	12
27	49/M	94.7	93.7	11	10
28	64/F	85.4	84.3	8	7
29	53/M	95.8	94.7	9	8
30	50/F	91.6	90.6	10	9

*All the data collected are on different dates

Table 1.1: Paired samples statistics for WOMAC scale.

Test	n	mean	SD	df	t value	significance
pre	30	91.0	3.69	29	1.86	0.03
pro	30	89.0	4.0	29		

Paired t test results: This result shows that there is a significant difference in the means of within the group. The pre-test of WOMAC scale gave a mean value of 91.0 and post-test of same WOMAC scale gave a mean value of 89.0 and p value was obtained of 0.03 with t value of 1.86 which is statically significant.

Table 1.2: Paired samples statistics for HAD scale.

Test	n	mean	SD	df	t value	significance
pre	30	10.93	2.39	29	2.37	0.01
pro	30	9.50	2.20	29		

Paired t test results: This result shows that there is a significant difference in the means of within the group. The pre-test of HAD scale gave a mean value of 10.93 and post-test of same HAD scale gave a mean value of 9.50 and p value was obtained of 0.01 with t value of 2.37 which is statically significant.

2. Results

Osteoarthritis of the knee shows various symptoms which may affect activity of daily living and anxiety in people. This study shows the effect of the ESCAPE-PAIN knee programme in activities of daily living and anxiety in osteoarthritis of the knee. The present study shows that the single group which was included in this programme showed significant improvement in improving the activities of daily living along with anxiety factor. Assessing of patients was done with WOMAC and HAD scale before and after the intervention. It was found that the programme showed a good significance in improving the activity of daily living along with improving the anxiety using ESCAPE- PAIN programme.

3. Discussion

The present study is on the effect on activities of daily living and on anxiety in patients suffering from osteoarthritis of knee in following participation on ESCAPE-knee pain - a rehabilitation programme that integrated patient education, self-management and coping strategies and exercise. For most of the patients they felt the sensation of pain during the completion of daily needs and they had displeasing beliefs and it is continued to do so but after being a part of the programme it turned out to be more optimistic thoughts. They confirmed that the programme planned for them showed improvements.

The patient expressed their thoughts on how they felt helpless and negative thoughts about knee osteoarthritis and thought it is normal cannot be treatable and has to go on with it and might have to undergone surgery^[11,12,13] and unfortunately such thoughts lead them to agreement to increase in nature of pain causing disability and not opting for in search of treatments. But fortunate to this the self-management plans that encourage patients to improve confidence and responsibility towards themselves^[14].

After going through an exercise-based programme on regular bases, people require to have faith that the changes that occurred are harmless, needed, helpful^[15], and should have courage to complete it^[16-18]. Due to pain and myths patients believed before going through such programmes patients used to avoid doing exercises even though they know it is harmless.

However, simply giving information about their condition and the benefits of pleasing behaviours is not adequate to stimulate the behavioural change - especially if the attitude is burdensome, sometimes patients are dubious about how they can perform it and are not acceptable about its effectiveness and have concerns that it may harm them^[19,20]. But experiencing a successful intervention people's belief towards treatment about the management of their problems with exercises and education components^[20]. The results of the RCT showed that the ESCAPE-knee pain programme improved people's exercise thoughts and self-ability^[13,21].

There have been many studies stating that only psychological treatment may not be efficient There is a still an emergency urge to help to address the discouraging thoughts on exercises and teach proper patient-education strategies for better outcome of the disease and improve the patient's conditions and wellbeing and also the patient understandings towards the disease is also still in lack^[22]. It was also mentioned to date, most clinical trials have investigated only a limited number of psychosocial traits associated with any other disorders, which has limited one's ability to gain a better knowing of the effects of on OA. To understand the complex relations between psychosocial traits the condition requires careful understandings of other clinical variables. Addressing all the main issues and to explore more knowledge on this area the study was conducted.

Hence the present study has collaborated the issues that been long term seen in patients suffering from osteoarthritis especially in knee, where patients has felt that they have not been able to perform daily activities which in turn made them stress and anxious in real life decreasing their quality of life thus making them dependent and vulnerable in their lives. Many studies showed treatments that helped patients to overcome anxious issues but not to cope up with how to deal with their lifestyle. Few other studies showed that improvement in condition can personally lead to taking up activities in their life but didn't show how to overcome the anxiety or stress they have dealt during their hard time. This present study was taken up as an experiment to deal with both the

effects i.e.; improving activities of daily living along with decreasing anxious levels in osteoarthritis patients.

The integrated rehabilitation programme successfully helped people to improve their quality of life and advices that the progressions made on patients' ability to understand made usage of exercises and self-coping strategies. The exercise component helped people to gain good strength and balance as the exercises involved here are to improve condition. The educational component helped people individually understand how to cope up when everything fails.

The advantage of this programme is that patients have been participating in a group hence while attending education exercise sessions they not only enjoyed thoroughly but rather shared their highs and lows with each other which made them realize that each individual has their own suffering and one can come up with other bearings.

4. Conclusion

The patients have gained a good strength and made importance about the essentiality of exercises and education in the management of knee pain stating the present study effectiveness of exercise component also along with the education component of ESCAPE-knee pain, it confirmed that it showed a people's positive thoughts about exercise, convincing them of the importance, safety and benefits attainable through exercise. After the completion of intervention for 6 weeks, it was found that the programme showed a good significance in improving the activity of daily living along with improving the anxiety using ESCAPE- PAIN programme. This study was approved by the ethics committee by Andhra Medical College Reg No: EC/NEW/INST/2019/397.

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