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Research Article

AN EXPERIMENTAL AND COMPARATIVE RESEARCH ON THE CORE STABILIZATION EFFECTS IN THE ABSENCE AND PRESENCE OF CONVENTIONAL PHYSICAL THERAPIES TO MANAGE NON- SPECIFIED PAIN IN THE LOWER BACK AREA: MAYO HOSPITAL, LAHORE

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Abstract:

Objectives: The research aim was the examination of the core stabilization exercises effects on the conventional physiotherapy to manage non-specified low back ache and pain also known as LBP.

Methodology: The research design was comparative and experimental conducted at Mayo Hospital, Lahore (Physiotherapy Department). Our research included a total of forty cases that were diagnosed with the non-specified LBP in the age group of 18 to 65 years. All the included patients were divided into two groups randomly:

Group – A (Experimental Group): The patients of this group were managed with the help of conventional physiotherapy and core stabilization exercises.

Group – B (Control Group): The treatment of these cases was carried out with conventional physiotherapy as the sole treatment therapy. Measured outcomes were functional outcomes of physical and pain which were measured through VAS (Visual Analogue Scale). Physical outcomes in terms of function were measured through Modified Oswestery Disability Questionnaire (MODQ).

Results: We applied T – Test on A group and obtained MODQ and VAS p-values which were significantly observed as (0.000 for both); whereas, in group B the p-values were also same as mentioned earlier. With the AVOVA application insignificant p-values were observed for VAS and MODQ as 0.09 & MODQ as 0.018.

Conclusion: Improvement was observed in both A and B groups for functional activity and pain; whereas, A group was treated with the core stabilization exercises assisted with the conventional treatment which reflected a bit of improvement in the function and pain in B group. For the attainment of better outcomes any of the mentioned intervention can be used in order to produce effective management.

Keywords: Conventional physiotherapy, Core stabilization exercises, Lower back pain (LBP), (VAS) Visual analoguescale.

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INTRODUCTION:

Research was aimed at the effective determination of the various therapeutic techniques to manage the incidence of LBP in the patients. This pain known as LBP is felt in the area between 12th rib and lower gluteal folds also known as the lower back. This pain may radiate to the side of both legs or it may be felt as there is no radiation [1]. In the incidence of non-specified pain evidence of reason and cause is unknown. There may be a specific reason behind the incidence of the LBP because of the known cause or because of the specific pathology such as prolapsed disc, tumors, inflammatory conditions, fracture, osteoporosis, herniated nucleus pulposus [2]. The cause is known in five to ten percent of the cases which is non-specified [1]. Number of reasons are involved behind the radiation of LBP or without the incidence of pain; which are idiopathic, degenerative, inflammatory, congenital, renal, traumatic, gynecological, neo-plastic, postural, mechanical, metabolic or rectal systemic causes [3]. LBP has become the second common most cause in USA which causes the absence from work centers [4]. It includes various factors of risk such as life style, gender, age, socioeconomic status, occupation and smoking [5]. Many methods are used conventionally for the reduction of symptoms and pain to improve the function of the activity. Use of drugs to reduce the pain is also common practice such as NSAIDS, analgesics, naproxen ibuprofen, muscle relaxants, opioids and steroids [6, 7]. Few other related modalities also include heat therapy, mechanical or manual traction, short-wave diathermy (SWD), transcutaneous electrical nerve stimulator (TENS), therapeutic ultrasound, and therapeutic exercises and massage [8].

It has been observed through the core stabilization exercises that they are effective in the treatment of the LBP. Core stabilization exercises primarily aims at the spinal stability improvement, endurance, strength and function which decreases the intensity of pain. The core musculature strength plays very important role in the spine stability and also decreased the instability issues [9]. The target of the core stabilization exercises is to abdominal, gluteal muscles and para-spinal stabilization. The exercises included in the stability are abdominal curls up, side – bridge, oblique curls up, quadruped exercises with the exercise progression.

MATERIALS AND METHODS:

The research design was comparative and experimental conducted at Mayo Hospital, Lahore (Physiotherapy Department). Our research included a total of forty cases that were diagnosed with the non-

specified LBP in the age group of 18 to 65 years. Patients were selected from both the genders including female and male. All the cases having non-specified LBP in the age of 18 – 65 years were included in the research paper. All the cases of malignancies, spinal infections, tumors, fever, ankylosing spondylitis, weight loss and chills were not made a part of the research. Systematic random sampling was used for the selection of the sample in the even order such as every second, fourth and sixth onward was short listed in “A” group and odd in the “B” group. Twenty cases were included in both the groups such as **Group – A (Experimental Group):** The patients of this group were managed with the help of conventional physiotherapy and core stabilization exercises. **Group – B (Control Group):** The treatment of these cases was carried out with conventional physiotherapy as the sole treatment therapy. Measured outcomes were functional outcomes of physical and pain which were measured through VAS (Visual Analogue Scale). Physical outcomes in terms of function were measured through Modified Oswestery Disability Questionnaire (MODQ).

Thirty minutes thrice in a month were given to the patients in the treatment session. Physical outcome and pain were the outcomes measurements. VAS was used for the measurement of pain in the range of zero to ten which indicated mild to severe pain in the patients. MODQ was used for the measurement of patient’s physical functional results. The presentation of the results was made through lower percentage and percentage observed with visible improvement. Pre and post treatment in the second month the values of the MODQ and VAS were also compared for both groups. Research used various materials such as table of treatment, MODQ, VAS, consent form and data collection sheet. For pre and post treatment measurements of the MODQ and pain scales were utilized for four months and after that values were compared within the groups and inter groups for the analysis of the reduction of the pain observed through VAS and functional outcomes improvements observed through MODQ.

SPSS – 16 was used for the data analysis at the p-value as (0.05) and (< 0.05) were observed significant. Frequency tables were used for the representation of the quantitative data such as mean and SD. Frequencies were used for the qualitative data representation. Double intervention affect was observed with paired T – Test. Both groups’ interventions were compared through ANOVA. Windows – 7 was used as the operating software.

RESULTS:

We observed in the forty patients of the research sample that male and female were respectively 27 males (67.5%) and 13 females (32.5%). About 22 cases (55%) were observed with gradual symptoms onset and 18 cases shown sudden onset (45%). In these cases, 14 cases (35%) were observed with visible outcomes of the radiology with underlying pathology. More involvement was observed in the right side of the back in comparison to the left side in 25 cases (62.5%). Group – A was observed with pre-treatment VAS scale values as (7.3 ± 1.2) and pre-treatment MODQ values as (66.5 ± 12.3) ; whereas, in the event of post treatment as (46.7 ± 8.8) . Significant p-values were observed in both MODQ and VAS as (0.00) in both the groups. B group was observed with the mean values of VAS in the pre-treatment as (7.4 ± 1.04) and in the event of post treatment it was observed as (3.7 ± 1.09) . In the same way, MODQ mean values in the event of pre-treatment was (70 ± 10) and post treatment MODQ was (45 ± 9.2) . Significant p-values for both the groups in MODQ and VAS were observed as (0.00). Repeated measure ANOVA was applied and VAS was observed as p-

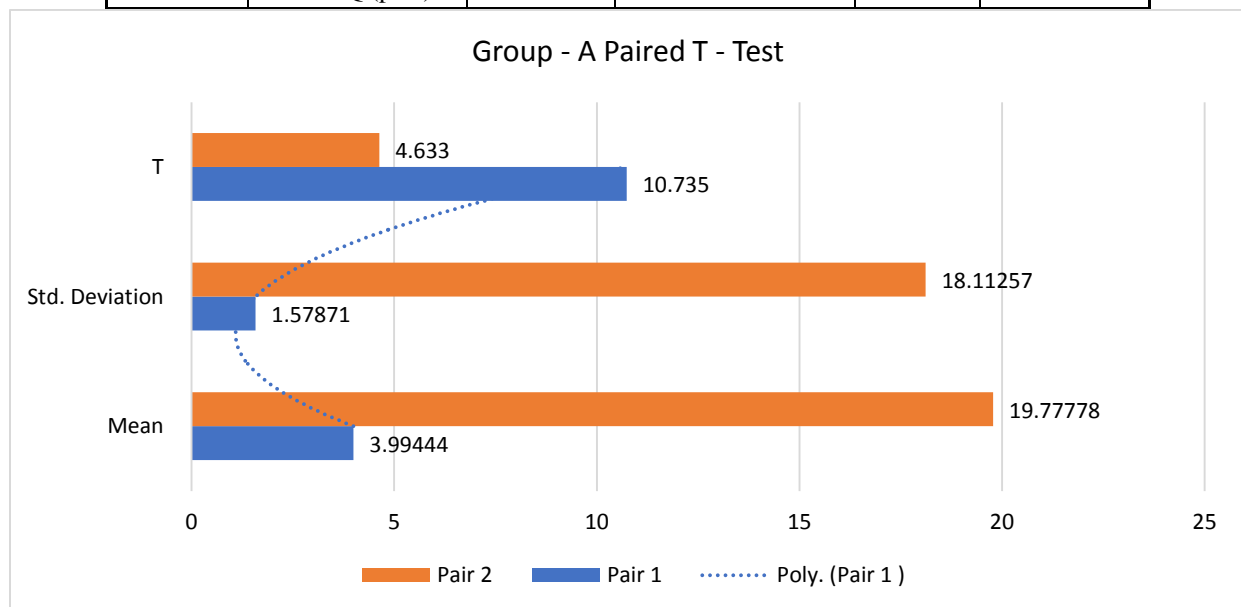
value (0.09) and in the case of MODQ the value was observed as (0.018) being significant.

DISCUSSION:

LBP is a serious issue and poses serious threats to the health of the human being. It is among the common and repeated issues and eighty-five percent of the world population is suffering from this issue, this incidence is bad in fifty percent of the population [10]. Research was aimed at the comparison of the core stabilization exercises effects in the presence and absence of the conventional methods of management for the non-specified backache issues in the intervention of the core stabilization with conventional treatment of physiotherapy that is known as effective and improves the overall comfort scores and decreases the pain scale. Males were dominant in this research in the incidence of LBP as 67.5% males were observed with LBP developed stage. Gradually developed symptoms in most of the cases were observed in 55% of the cases. Radiological changes were observed in 35% of the cases which were linked with the back ache right side involvement was observed in 62.5% of the cases.

Table – I: Paired T – test for group “A” (number = 20) given core stabilization exercises and conventional therapy.

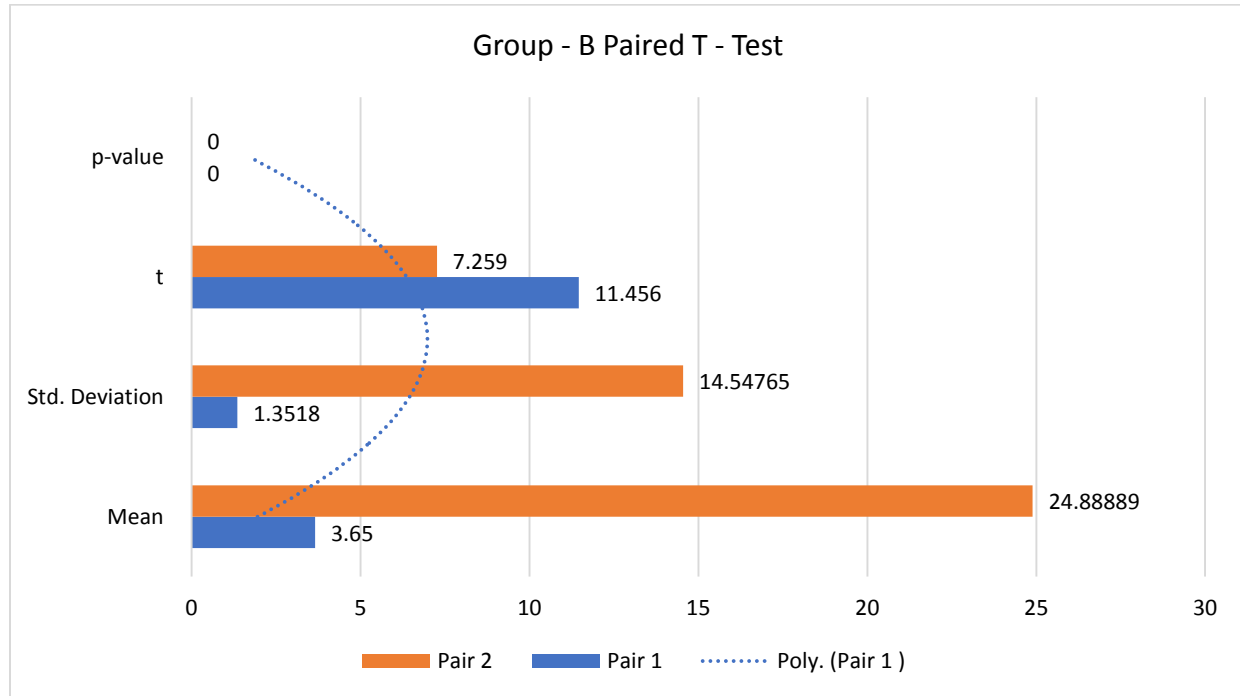
Variables		Mean	Std. Deviation	T	P – value
Pair 1	VAS (pre) VAS (post)	3.99444	1.57871	10.735	0
Pair 2	MODQ (pre) MODQ (post)	19.77778	18.11257	4.633	0



*p-value (< 0.05)

Table – II: Paired T – Test for group “B” (number = 20) given core stabilization exercises alone

Variables		Mean	Std. Deviation	t	p-value
Pair 1	VAS (pre) VAS (post)	3.65	1.3518	11.456	0
Pair 2	MoDQ (pre) MoDQ (post)	24.88889	14.54765	7.259	0



*p-value (<0.05)

Van Tulder states that medications including analgesic and NSAIDs reduces incidence of LBP in the patients [6]. The role of the muscle relaxant cannot be over ruled in the reduction of stiffness and pain [7]. Few of the research studies also observed modalities utilization TENS USG, SWD which reduces the pain and improves the LBP patient's functional activities [11].

According to the research of Rubinstein SM and his colleagues, although conservative and safe is considered the spinal manipulation to manage the pain but it does not improve stability and do not effectively reduces the pain [12].

John Wiley is of the view that exercise has its own benefits and also reduces the pain in the chronic LBP patients [13]. We emphasized in our research on the core stabilization exercises with conventional physiotherapy because significant changes were observed in the level of pain and the functional stability for the improvement of the overall lifestyle of the affected cases.

Ferreira states that core stabilization produces better outcomes when compared to the non-treated cases or in other words for the cases treated in a conventional way [14]. Limited availability of data has been observed in terms of core stabilization exercises including conventional methods which are used for the LBP treatment. Both techniques have been proved through various research studies. Combined effectiveness has not been highlighted by any of the comparative research studies.

Our research proves that both the strategies are effective for the management of the LBP in order to improve functional status and for the reduction of pain especially in the chronic cases of LBP. Both the methods are effective in order to reduce the pain and agony in the lower back and areas adjacent to the ribs. It also helps in the regaining of the functional stability. Significant p-value was observed for VAS and MoDQ as (0.000) and (0.000).

CONCLUSIONS:

Improvement was observed in both A and B groups for functional activity and pain; whereas, A group was treated with the core stabilization exercises assisted with the conventional treatment which reflected a bit of improvement in the function and pain in B group. For the attainment of better outcomes any of the mentioned intervention can be used in order to produce effective management.

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