Figure 1: Study protocol

Study design: A randomized controlled trial.

Study setting: Collaborative Drug Discovery Research (CDDR) Group, Faculty of Pharmacy UiTM Puncak Alam

UiTM Puncak Alam

Subject recruitment and intervention: Physiotherapy Clinic at UiTM Puncak Alam

**EXCLUSION CRITERIA**

1. Nerve involvement or compression

2. Spinal disorders (e.g. spondylolisthesis, herniated nucleus pulposus, spondylosis, spinal fracture, back surgery)

3. Neurological deficit (e.g. multiple sclerosis, hemi/ para-paresis or myelopathy)

4. Infectious diseases (e.gs skin problem)

5. Menstruation during research, pregnancy, smokers and febrile

6. Receive any LBP medication and seek any treatment for LBP.

**INCLUSION CRITERIA**

1. Age between 20 – 40 years old

2. Non-specific LBP ≥ 4 weeks

3. Pain scale (VAS) ≥ 4

4. BMI: 18.5 kg/m2 – 29.9 kg/m2

4. Willingness to participate in this study

Group A (n=32)

(LBP)

Group B (n=32)

(LBP)

Pre-test:

1. Blood sample: substance P & cytokine

2. Saliva sample: substance P & cytokine

3. Visual Analogue Scale (VAS)

4. Rolland-Morris Disability questionnaire

|  |  |
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| Relaxation technique | |
| 1. | Supine lying  image002.jpg  Figure 7 |
| 2. | Relaxation position within 30 minutes prior assessment. |

Group A

Group B

|  |  |
| --- | --- |
| Traditional Malay Massage (TMM) technique | |
| 1 | - The TMM treatment will be 30 minutes.  - Ask patient’s permission to expose an  affected area.  patientpositionprone1.jpg  Figure 1  - Position: Prone lying with pillow under  stomach and heels. |
| 2. | a) Fan stroking  1 fan stroking.JPG  Figure 2  - Place both hand (side by sides) on the lower back with full palmar and finger surfaces. Move both hands upward (until upper shoulder) gently and smoothly.  - Practitioner needs to keep a straight back and lean forward on practitioner hands on body to apply a steady pressure.  2 fan stroking.JPG  Figure 3  - Then, move both hands downwards with fan hands out to both sides of the body from upper shoulders  - Move down until lower back, molding them to the contours of the body with reducing the pressure.  - Pull hands up towards each other and swivel around to begin effleurage again. Repeat several times within 9 minutes. |
| 3. | b) Basic kneading  3 basic kneading.JPG  Figure 4  - Place practitioner hands flat on body with elbows apart and fingers pointing away.  - Gently grasp some flesh (muscle) using right hand and release it into left hand  - Let left hand take the flesh and then release it into right hand.  - Repeat several times to keep rhythmic within 7 minutes. |
| 4. | c) Thumb stroking  Tui Na 2.jpg  Figure 5  - Stroke firmly from lower back and moving upward and out to the side with left thumb.  - Then, follow with right thumb, stroking little higher.  - Make the stroke in circulation motion cross the muscle fiber and repetitively, building up a steady rhythm.  - Repeat several times within 7 minutes. |
| 5. | d) Static pressure  6 static pressure.JPG  Figure 6  - Give a static pressure on right lower back using right hand.  - Then release slowly and glide to the next point.  - Do the same steps on left lower back.  - Repeat several times within 7 minutes. |

Post-test:

1. Blood sample: substance P & cytokine

2. Saliva sample: substance P & cytokine

3. Visual Analogue Scale (VAS)

4. Rolland-Morris Disability questionnaire (after 1 day treatment)