

Original Research

Differences Between Effectiveness Of Inmas Acupuncture And Local Points In Back And Shoulder Pain

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ABSTRACT

Background: Shoulder pain and low back pain usually arise because of overuse or excessive use. Acupuncture can relax back muscles, waist and shoulders through cutaneousomatic reflex; and increase the release of endorphins so that it can reduce inflammation in back, waist, and shoulders so that it can help relieve pain and restore the function of back, waist, and shoulders. This study aims to determine differences between effectiveness of INMAS and local points acupuncture on pain and quality of life in workers with back and shoulder pain.

Methods: This study is quantitative quasi experimental design with control group with pre and post test, conducted in July-September 2020 at Verta Medika Acupuncture, Klaten. The population was all patients with shoulder and back pain who underwent acupuncture therapy and the sample was determined by inclusion and exclusion criteria and divided into two groups using simple random sampling. Each group consisted of 15 patients. Data analysis focused on pain scale (NRS) and quality of life (WHO-QoL).

Results: INMAS technique was better at reducing pain scale ($p = 0.001$), quality of physical health ($p = 0.083$), quality of psychological health ($p = 0,000$), quality of social ($p = 0,000$), and quality of environmental health ($p = 0.045$).

Conclusion: INMAS technique is more effective than local points acupuncture for reducing pain levels and it improves the quality of life. Research using larger population and sample is needed to increase validity and reliability of the study.

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INTRODUCTION

Work that is done manually using human power to lift or move items that are not done ergonomically will have the potential to cause injury or damage the body tissues due to excessive workload ((Pramestari, 2017). Data shows that 25% of injuries to workers in Indonesia are caused by mishandling (Joice et.al., 2014). Meanwhile, according to the Indonesian Ministry of Health, about 40.5% of workers have health problems related to their work with 16% muscle complaints called back pain and shoulder pain (Tatilu et al., 2014).

Acupuncture can relax muscles in back area, waist and shoulders through cutaneousomatic reflex; and increase the release of endorphins so that it can reduce

inflammation in back, waist, and shoulders so that it can relieve pain and restore back, waist, and shoulders functions (Sun et al., 2001).

INMAS (*Integrative Neuromuscular Acupoint System*) method is an acupuncture application that integrates modern biomedical science (anatomy, physiology, pathophysiology) and classical acupuncture (Traditional Chinese Medicine) in pain management related to impaired function of muscles, nerves, bones and internal organs (Ma YT, Ma M, 2005). Whereas in daily acupuncture practice, an acupuncturist often uses local points acupuncture applications in dealing with back and shoulder pain. In the future, an effective and efficient method of acupuncture therapy is needed for the management of back pain and shoulder pain.

This study aimed to analyze difference in effectiveness of INMAS acupuncture method with local points on pain and quality of life for workers with back pain and shoulder pain.

MATERIALS AND METHOD

This study is quantitative quasi experimental design with control group with pre and post test (Dharma, 2011). INMAS is the treatment group, while the local point is the control group. Acupuncture interventions were held from July to September 2020 at Verta Medika Acupuncture, Klaten.

The population was all patients who suffered back and shoulder pain during the period and the sample was determined based on inclusion and exclusion criteria and obtained 30 samples. With the simple random sampling technique, the samples was to divide into two groups consisting 15 patients for INMAS method and 15 patients for local points acupuncture method.

This study measured the pain scale (NRS) and quality of life (WHO-QoL) (WHO, 2012) before and after acupuncture therapy which was carried out after 10 treatments for local points and using INMAS method according to the findings of palpation of H1 and H4. Data were analyzed using paired T Test. This Study have ethical approval from Health Research Ethics Committee with No. LB.02.02/1.1/2677.1/2020.

RESULTS

INMAS is more effective in reducing the pain scale in sufferers of back pain and shoulder pain. Average pain scale reduction using INMAS treatment was 4.2000 and local points was 2.1333 ($\rho = 0.001$).

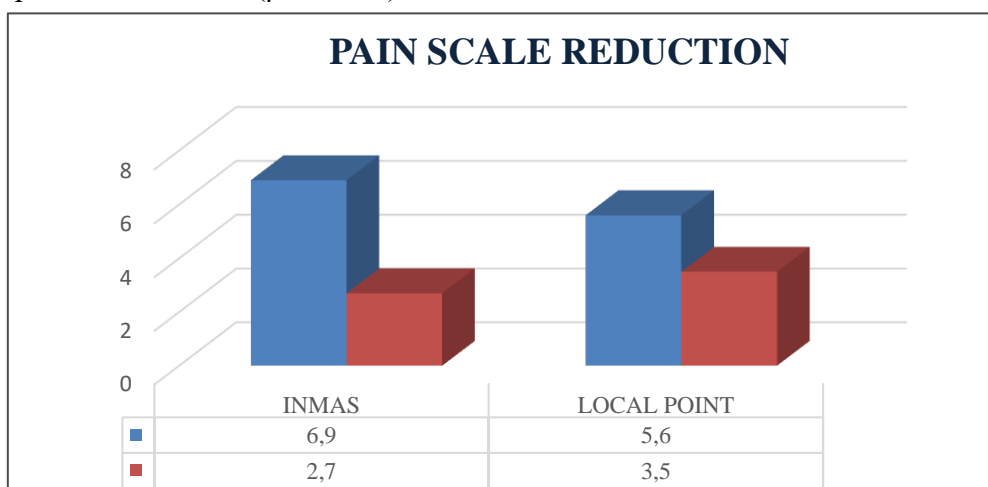


Figure 1. Pain scale reduction (NRS) before and after treatment INMAS and local point.

INMAS was more effective than local point acupuncture in reducing the back pain and shoulder pain scales. At the initial measurement, the average pain scale on the INMAS procedure was 6.9 and the measurement result after the action was 2.7 or there was a decrease in the mean pain scale of 4.2 (NRS). Whereas in local acupuncture, the mean pain measurement before the action was 5.6 and after the action was 3.5 or there was an average decrease of 2.1 (NRS).

Average increase in the quality of physical health using INMAS treatment was 12.9333 and with local points of 7.2000 ($p=0.083$). Average increase in the quality of psychological health with INMAS treatment was 18.6000 and with local points treatment was 10.0667 ($p=0.000$). Average increase in the quality of social relations with INMAS treatment was 20.5333 and with local points treatment of 10.0000 ($p=0.000$). Average increase in the quality of environmental health with INMAS treatment was 16.0000 and local points treatment was 10.2000 ($p = 0.045$).

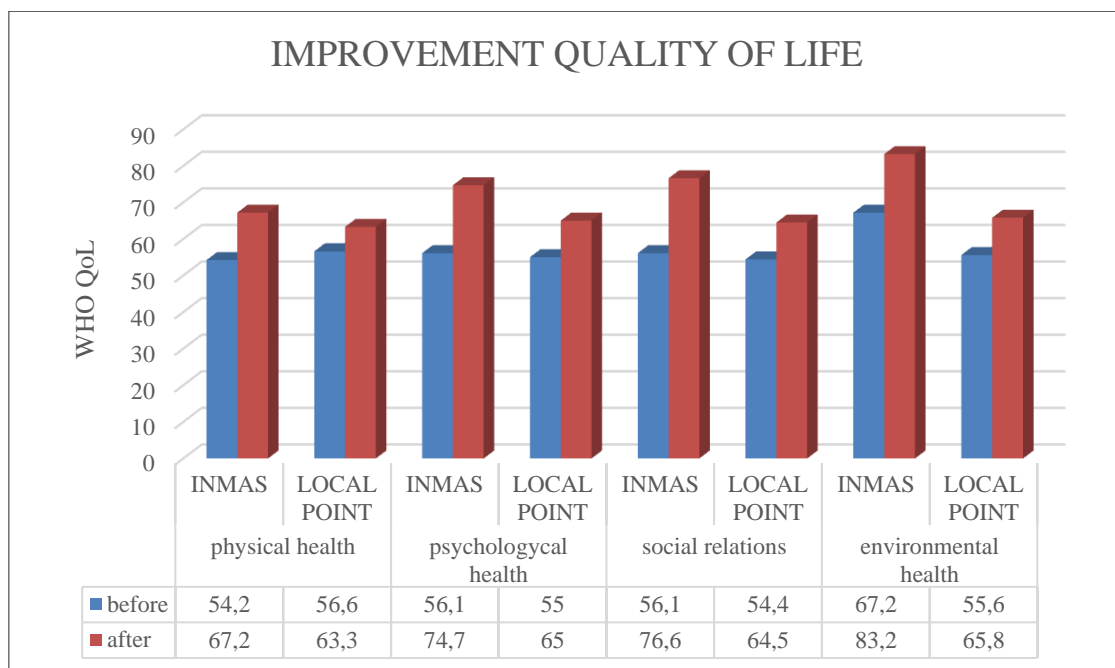


Figure 2. Improvement of Quality of Life (WHO QoL) before and after treatment INMAS and local points.

From the graph, it can be seen that the INMAS action is better in improving the quality of life for sufferers of back pain and shoulder pain. With INMAS, the quality of physical health rose from an average of 54.2 to 67.2 or an increase of 12.9, while local acupuncture measures increased from 56.6 to 63.3 or an increase of 6.7. In terms of the quality of psychological health, the INMAS action increased from 56.1 to 74.7 or an increase of 18.6, while with local acupuncture it increased from 55 to 65 or an increase of 10. In social relations, INMAS actions increased from 56.1 to 76, 6 or an increase of 20.5, while with local point acupuncture, it increased from 54.4 to 64.5 or an increase of 10.1. On the quality of environmental health, the INMAS action increased from 67.2 to 83.2 or an increase of 16, while with local point acupuncture it increased from 55.6 to 65.8 or an increase of 10.2.

DISCUSSION

Based on the results of hypothesis testing, it appears that the INMAS method is more effective than the local point ($p = 0.01$). This can be because the use of the INMAS method has a wider range of therapeutic effects because it combines body homeostatic improvement, segmental function improvement through the segmental point, and localist repair through symptomatic points, while local point acupuncture only relies on repairing the localist of the insertion site. (Dharmananda (2005) explains that INMAS is an acupuncture therapy method that combines local, segmental, and central effect approaches by combining homeostatic points that provide dynamic balance to the body and function as central analgesia in cases of pain. One of the points of homeostasis in INMAS is Yanglingquan (GB.34) (HA.24 / Common peroneal) which reduces pain and flexes muscles, and can improve the shrinkage of the joint capsule. Meanwhile, according to Ma YT, Ma M (2005) the local point in acupuncture intervention is breaking the energy crisis at the puncture site, causing relaxation, improving blood circulation, repairing the healing of damaged tissue.

Different techniques and parameters with this study Garrido, JCD; Jorge Vas, J; Lopez (2016) conducted a study comparing sham acupuncture and acupuncture. The results showed that acupuncture showed better shoulder pain and functional reduction effects than sham acupuncture using UCLA parameters (*University of California-Los Angeles*). Different from this technique, Hu et al.(2018) reported that dry needling is more effective in reducing pain and disability in LBP sufferers.

Hypothesis testing for the WHO-QoL quality of life found that for the quality of physical health INMAS was no more effective than local point acupuncture ($p = 0.08$); the psychological health quality of INMAS was more effective than local point acupuncture ($p = 0.00$), the quality of INMAS social relations was more effective than local point acupuncture ($p = 0.00$); and the environmental quality of the INMAS method was slightly more effective than local point acupuncture ($p = 0.045$). This is possible because the INMAS method looks at the body holistically so that the INMAS method can reach the dimensions of physical health by overcoming pain through symptomatic points, improving body balance both physically and psychologically through homeostasis points and segmental points (Ma YT, Ma M, 2005). The impact of improving physical and psychological health can improve social relations and better environmental changes. Saputri (2012) reported in his research that the lower a person's stress level (the better his psychological health) the higher his work productivity.

The balance of physical health and social health will make a person have the ability to interact socially well and can make the environment in which they live and work better and more productive. A normal / mentally healthy person is a person who displays adequate behavior & is acceptable to society in general, his life attitude is in accordance with the norms & patterns of community groups, so that there are satisfying inter-personal & intersocial relationships (Dewi Kartika Sari, 2012).

This is different from the research by Shi et al. (2018) who show that both conventional acupuncture and *motion style acupuncture (MSA)* provide improvements in joint pain and function in people with shoulder pain, while in this study assessing aspects of physical, psychological, social, and environmental health. In contrast to this study, Zhang et al. (2016) assessed the progression of the effect of (*Intention-to-treat / ITT analysis* contralateral acupuncture) from week 2 to 16 showed significant pain relief with contralateral acupuncture, CM (*Constant-Murley Score*) and DASH (*Disabilities of the Arm, Shoulder and Hand*) also increased at all points in time ($p < 0.01$). Shoulder

mobility, physical function, social functioning and mental health components of the SF 36 (*Short Form Health Survey 36 items*) also improved with contralateral acupuncture. (Green et al. (2005) using pain intensity (visual analogue scale, VAS) and shoulder function (*Constant-Murley Score: CMS*), after 5 weeks of acupuncture treatment, the intensity of TrP (*trigger point*) decreased significantly ($p < 0.001$). Shoulder function also improved significantly between pre treatment and 5 weeks after TrP ($p < 0.001$). Compared to SH (*sham acupuncture therapy*), TrP (*Trigger Point therapy*) appears to be more effective for chronic shoulder pain.

Lo, et al. (2020) reported that electro acupuncture provided a decrease in VAS earlier than sham electroacupuncture. In addition, electroacupuncture further enhances AROM (*Active Range of Motion*) for flexion and abduction of shoulder joint movements. In contrast with this research technique, Lee, et al, (2018) reported that the use of *thread-embedding acupuncture* (TEA) or acupuncture and regular acupuncture for 10 weeks showed a significant increase in VAS scores (*visual analog scale*), SF-MPQ (*short-form McGill Pain Questionnaire*), and ODI scores. (*Oswestry Disability Index*) in patients with chronic low back pain.

Meanwhile, Comachio et al. (2020) reported the results that EA (*electro acupuncture*) is no better than MA (*manual acupuncture*). Both therapies have the same efficacy in reducing pain and disability for nonspecific chronic low back pain. The meta-analysis conducted by Furlan et al. (2005) concluded that for chronic low back pain, acupuncture was more effective for pain relief and functional improvement than no treatment or sham treatment immediately after treatment and only in the short term.

The discussion of the results of this study with other studies shows that the various methods and parameters of acupuncture give hope for pain management and body functional improvement in sufferers of back pain and shoulder pain. The INMAS method is a therapeutic method that has benefits not only for pain relief but also for improvement of psychological conditions, social relations and environmental health conditions.

CONCLUSION

Acupuncture can be applied to all musculoskeletal pain disorders in both formal and informal workers. INMAS method can be used as a good choice for the treatment of musculoskeletal pain in clinical services, especially back and shoulder pain. Further research using larger respondents and more complex methodologies and analyzes is needed to increase quality of research results.

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