Abstract

Due to the complexity of nursing work and high physical stress, nurses show high risk for Low Back Pain (LBP). The impact of low back pain on the loss of work capacity and disability makes it especially important to effectively treat LBP in nurses. The purpose of this study was to investigate the effect of cupping therapy on the treatment of LBP among nurses. 100 chronic non-specific low back pain nurses aged 39 to 51 were randomly divided into two groups: experimental group and control group. The control group received placebo, and the experimental group received cupping therapy for 4 weeks. Visual Analog Score (VAS), Bone Mineral Density (BMD) examination and SF-36 scale were used to evaluate the improvement in pain, BMD and quality of life before and after treatment in the two groups. The VAS score of the experimental group (1.32 ± 0.78) was significantly lower than that of the control group (2.88 ± 0.83) after treatment. After treatment, the BMD results of the two groups was significantly higher than that before treatment (4.92 for experimental group t value, 2.87 for control group t value, P < 0.01), and the degree of increase in the experimental group was significantly higher than that in the control group (t value 2.57, P < 0.01). In terms of quality of life, both groups improved significantly after treatment (17.94 for experimental group t value, 10.86 for control group t value, P < 0.01), and the experimental group showed better improvement (t value 6.64, P < 0.01). Cupping therapy has a positive effect on the treatment of low back pain in nurses and it has also significantly improved the bone density and quality of life of nurses. Future research needs to provide more evidence on the pathological mechanism and long course of treatment of LBP by cupping therapy.

Keywords: Cupping therapy; Low back pain; Nurse

Introduction

Low Back Pain (LBP) is defined as the symptoms of pain, discomfort and limited function in the area below the T12 ribs and above the hip folds excluding primary structural pathological changes such as disc hernia ion and spine fractures [1,2]. The pain of non-absolute LBP mainly comes from back pain, radiating pain of nerve root and involved pain [3]. LBP is currently one of the most serious burdens of noncommunicable diseases worldwide. Every year, approximately 60.1 million people worldwide are disabled or unable to perform heavy physical work due to LBP [4]. According to global statistics, the prevalence of non-specific LBP in adults worldwide is about 40%, and the incidence of the disease is about 38% each year [5]. Due to the heavy psychological and working pressure, expressionism and other factors brought by the complexity of nursing work, the prevalence of LBP in nurses is much higher than that in other populations [6].

It has been reported that the prevalence of non-specific LBP among nurses around the world is 40-90% and developing countries with a shortage of health workforce are at higher risk [7]. In China, the combined prevalence of LBP meta-analyses reported by nurses in the early literature is 72% [8]. LBP is already one of the biggest challenges facing nurses in their own health.

Related research had shown that acetylsalicylic acid, caffeine, acetaminophen, and chlorpheniramine were more commonly used in clinical medical treatment to relieve LBP in patients [9]. However, studies in United States and China have also found that alternative medical therapies such as yoga and tai chi have a positive effect on LBP [10,11]. Cupping therapy, as a traditional treatment in Chinese medicine, has been proven to have a positive effect in relieving and improving pain [12]. This study aims to explore the role of cupping therapy in relieving LBP among nurses in China.

Method

Design and setting

This was a Randomized Controlled Trials (RCTs) study in Henan Province, China. The researchers randomly selected 100 registered nurses with LBP from July to August 2019 and divided them into experimental group and control group with 50 cases each according to the treatment method. Participants met the low back pain diagnostic criteria in the “Guidelines for Clinical Research of New Chinese Medicines” formulated by the Chinese National Administration of Traditional Chinese Medicine. The nurse presented with general weakness, significant back pain and gradual aggravation and the bone mineral density test result of positive will be diagnosed with LBP. Participants excluded nurses with mental illness, recent use of hormones or drugs...

Effect of Cupping Therapy in the Treatment of Low Back Pain among Nurses in China

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that affect bone density, osteoporosis. The participants were all females. In the control group, participants were 40-51 years old, with an average age of 44.2 ± 2.7 years. Course of disease was 1.5 to 4 years, with an average course of 2.8 ± 1.1 years. In the experimental group, participants were 39-50 years old, with an average age of 43.8 ± 2.6 years. The course of diseases was 2 to 4 years, with an average course of 2.9 ± 1.2 years. There was no significant difference between the two groups of participants in terms of age and course of disease (P > 0.05, X² = 1.03, t = 0.25, 0.42) [13].

Types of interventions

Experimental interventions were used for the experimental group. Both groups of participants used the normal treatment regimen in the hospital, and on this basis, trained Traditional Chinese Medicine (TCM) physician made the participants changed their posture to a prone position. The treatment area was focused on the participants’ pain area and cupping was performed on the participants’ waist and sides of the spine. The physician applied the medium Vaseline to the treatment area, and absorbed the medium cup on the participants’ pain area by heating. The physician pulled the cup back and forth vigorously along the pain area until the participant’s pain area skin turned dark red. The same method was applied to the waist and sides of the spine.

This treatment was used once a week for the participants, with a course of four weeks and the participants’ recovery was evaluated after the course of treatment.

Comparators were used for the control group. The researchers used the same treatment in the control group as the experimental group, except for the cupping therapy. Vaseline was used as a placebo in the control group, both researchers and participants considered placebo ineffective.

Assessment method

The researchers used Visual Analog Score (VAS) to assess the pain levels of the two groups for participants before and after intervention [14]. LBP was directly proportional to VAS score. The VAS scale uses a straight line of 100 mm, with 0 mm on the far left and 100 mm on the far right. Two facial masks (the smiling face on the left and the crying face on the right) explain to the patient that 0 mm stands for no pain, 100 mm stands for very, very painful, from left to right, it shows increasing pain. Dual-energy X-ray Absorptiometry (DXA) was used to detect Bone Mineral Density (BMD) before and after treatment for two groups. SF-36 scale was used to detect Bone Mineral Density (BMD) before and after treatment (cm) t P

Discussion

In this study, we found that cupping therapy had a positive effect on LBP for nurses. Chinese cupping therapy as an auxiliary treatment method plays an important role in the pain, BMD and quality of life of nurses with low back pain. Previous studies had confirmed that...
cupping could reduce neck pain, improved function and QoL might be effective in patients with neck pain. The effect of cupping therapy in this study was similar to previous studies [16].

Psychological factors had an impact in assessing the effect of participants’ LBP treatment; this might cause some bias in the participants’ quality of life assessment [17]. This was consistent with previous findings [18]. However, in order to avoid bias, this study first used the effects of bone density measurement before and after treatment. By combining the results of BMD examination with the VAS score, it had a positive significance for evaluating the effect of cupping therapy on LBP for nurses.

Although this study confirmed the positive role of cupping therapy in integrated Chinese and Western medicine, however, through comparison between the experimental group and the control group before and after treatment, it had been found that the traditional Western medical diagnosis and treatment method was most significant for the treatment of LBP. At this stage, cupping therapy can only be used as an adjuvant therapy to alleviate the pain of patients, but the pathological mechanism and long-term clinical significance need further observation and research. In addition, cupping therapy has strict limits on the technical capabilities of the TCM physician; it may cause side effects such as burns and congestion during treatment [18]. In the treatment of LBP patients, TCM physician need to pay attention to the control of cupping therapy on cupping time, adsorption strength and acupoints.

Limitation

This study has certain limitations. The pain level of the nurses in this study may be affected by the menstrual cycle, which caused some errors in the VAS score results in this study. However, in the RCT experiment, due to the differences in the departments and nursing work of nurses, they continued to work during the treatment and there may be some biases in the evaluation of treatment effects.

Conclusion

Cupping therapy has positive significance in the treatment of LBP for nurses. Research also confirms it can reduce the pain and improve quality of life among nurses. Future research could focus more on the pathological mechanism and long-term clinical effect of cupping therapy to provide more evidence for the role of cupping therapy in treating LBP. It recommends that future studies can systematically demonstrate the effect of cupping therapy on low back pain in nurses through case reports.

Reference


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