

## A cross sectional study of chronic pain relief after *bekam* (traditional malay “cupping”) therapy

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**Introduction:** *Bekam*, an Islamic variant of cupping, is an ancient form of traditional medicine still practised today in Malaysia. There are published findings indicating that cupping benefits patients with low back pain, other musculoskeletal pain and even pain from cancer, herpes zoster and trigeminal neuralgia when pain is measured on an analogue scale. We proposed to investigate whether in addition to pain improvement on an analogue scale we could show if pain relief might be demonstrated in terms of reduction of analgesic use.

**Methods:** We carried out a retrospective cross sectional study on subjects who had been for outpatient clinic treatment with chronic pain of at least one month and who completed at least two *bekam* therapy sessions. In addition to documenting a pain score before and after therapy we documented their analgesic consumption.

**Results:** A total of 77 respondents, with overlapping symptoms of headache, backache and joint pains were included. The mean pain score before *bekam* therapy was  $6.74 \pm 1.78$ , and was  $2.66 \pm 1.64$  after two sessions of therapy. Twenty eight respondents completed six sessions of *bekam* therapy and had a mean pain score of  $2.25 \pm 1.32$  after. Thirty-four patients consumed analgesic medication before starting *bekam* therapy and only twelve did so after. The consumption of analgesics was significantly lower after *bekam* therapy.

**Conclusions:** *Bekam* therapy appears to help patients experience less pain and reduce the amount of analgesic medication they consume. Nevertheless only a randomised prospective study will eliminate the biases a retrospective study is encumbered with and we believe would be worth doing.

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**Keywords:** *Bekam*, cupping, chronic pain, analgesic use, pain score.

### Introduction

*Bekam* (or cupping) is an ancient form of traditional medicine practised by many cultures across the globe. The earliest known records of cupping date back to 3000 B.C. from ancient Egypt in the famous *Ebers Papyrus*, one of the oldest medical textbooks in existence. Whether it is known in different languages, such as *bekam*, *badkesh*, *hijamah*, *kuyukaku*, *orgakhoi*<sup>1</sup>, the basic purpose remains the same: to extract blood that is believed to be harmful from the body.<sup>2</sup> Cupping is defined by the American Heritage Dictionary of the English Language as “a treatment in which evacuated glass cups are applied to intact/scarified skin in order to draw blood toward/through the surface.”

*Bekam* itself is an Islamic variant of cupping<sup>3</sup> practised here in Malaysia. There are two types of *bekam*: *bekam kering* / *bekam angin* (dry cupping/air cupping) and *bekam basah* (wet cupping). *Bekam kering* involves applying evacuated cups to the skin without bleeding or scarification of the skin, and is used more for improving overall wellness. *Bekam basah*, on the other hand, involves skin scarification and subsequent drawing of blood through the wound to be evacuated, and has therapeutic purposes. It should be noted that *bekam* aims to relieve symptoms rather than cure disease. While the practice of *bekam* is not regulated in Malaysia, there are practice guidelines issued by the Traditional and Complementary Medicine Division of the Ministry of Health of Malaysia.<sup>2</sup>

While evidence based medicine has taken root in Malaysia, a large segment of the population continues to practise a syncretic mix of western medicine and traditional beliefs. For common ailments such as chronic pain non-steroidal anti-inflammatory drugs (NSAID) can be bought over the counter, and are relatively cheap. Yet these common drugs have side-effects and toxicities ranging from nausea, vomiting to more serious kidney injury, gastric bleeding and heart conditions.<sup>3,4</sup>

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There is still room to pursue what might be safer and better, and traditional medicine such as cupping and acupuncture, two common practices in the Asian region may have something to offer. They avoid chemicals and focus instead on the body's own healing abilities and in finding some way to support the natural processes. This sounds enticing, no chemicals, minimal or no side-effects, just pure healing. Furthermore, the fact that cupping has endured so long in human history suggests that it must have some efficacy.

However, can we measure any objective benefit in cupping? Can it relieve a common symptom such as pain? Pain is a subjective symptom and usually assessed using an analogue score. Systematic reviews of studies on cupping (Table 1) suggest that it is subjectively effective in a variety of conditions, ranging from pain to stroke rehabilitation. Significant differences are observed in Visual Analogue Scales for pain and similar scoring systems.

In addition to using an analogue score for pain we attempted to quantify pain relief in terms of reduction of analgesic usage.

### Methodology

We carried out a retrospective cross sectional study, between August and December 2014, on reduction of pharmacological analgesic consumption, in addition to documenting a pain score (based on Likert scale) in two *bekam* centres. We recruited respondents who had been for outpatient clinic treatment with chronic pain of at least one month and who had completed at least two *bekam* therapy sessions regardless of analgesic use. We employed convenience sampling whereby subjects were contacted by phone from a list provided by the clinic and asked if they were willing to answer the questionnaire. They were then asked to sign a written consent form. Those who did not give consent were excluded.

**Table 1: Summary of findings of systematic reviews on cupping**

AUTHORS	TYPE OF STUDY	PROBLEM STUDIED	SUMMARY RESULT
Huang C Y, Choong M Y, Li T S (2013) <sup>5</sup>	Systematic review	Lower back pain	Positive
Cao H, Li X, Liu J (2012) <sup>6</sup>	Systematic review	Herpes zoster Acne Facial paralysis Cervical spondylosis	Positive Positive Positive Positive
Lee M S, Choi T Y, Shin B C, Kim J I, Nam S S (2010) <sup>7</sup>	Systematic review	Hypertension	Equivocal
Lee M S, Choi T Y, Shin B C, Han C H, Ernst E (2010) <sup>8</sup>	Systematic review	Stroke rehabilitation	Equivocal
Kim J I, Lee M S, Lee D H, Boddy K, Ernst E (2011) <sup>9</sup>	Systematic review	Lower back pain Cancer pain Trigeminal neuralgia Brachialgia Herpes zoster	Positive Positive Positive Positive Negative
Lee M S, Kim J I, Ernst E (2011) <sup>10</sup>	Systematic review	Any pain syndrome Musculoskeletal pain Herpes zoster Hypertension Stroke rehabilitation	Positive Positive Positive Equivocal Equivocal

Our sample size was calculated using the formula  $N = [Z^2 P(1-P)]/d^2$  with a confidence interval of 95% (Z) and power of 80% (P) aiming to detect a difference of 20% (d) difference in analgesic use. It estimated 70 subjects were required.

The survey instrument was a two part questionnaire. The first part comprised of questions about the respondents' personal details. The second part was

concerned with pain. The questionnaire consists of a retrospective recall by the subject on the amount and type of analgesics they have consumed prior to their first *bekam* therapy.

The data collected were tabulated and analysed by using the Statistical Package for Social Science (SPSS) version 20. Outcome measures were the pain score and number of analgesic tablets used (all types, before *bekam* therapy and past one month) before and after therapy. Independent variables include: frequency of *bekam* (0-1, 2-4, 5 or more), age, gender, ethnicity and duration of pain. The data obtained on pain score and analgesic use were non-parametric. Hence we used the Wilcoxon Sign Rank test to analyse for statistical significance.

The study was approved by the Joint Committee on Research and Ethics of the International Medical University, Malaysia (Project ID No. CSc/Sem6 (23) 2014).

## Results

A total of 77 respondents, with overlapping symptoms of headache, backache and joint pains as shown in Figure 1 were included.

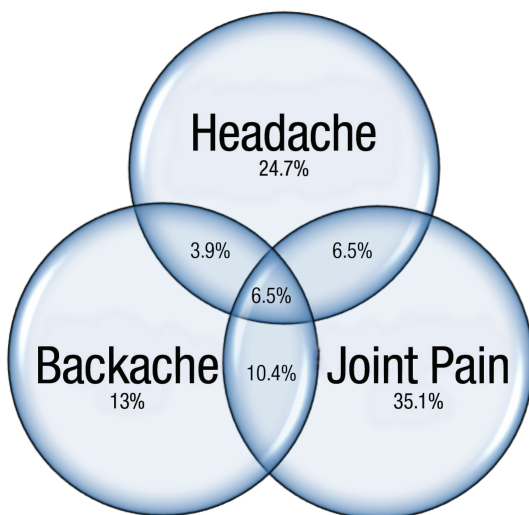


Figure 1: Nature of chronic pain among 77 respondents

The 77 respondents consisted of 42.9% males and 57.1% females. There were 45.5% Malays, 49.4% Chinese, 3.9% Indians and 1.4% of other races in Malaysia. The mean age was 47 years old, and ranged between 22 to 87 years.

Subjects having some joint pain (58.5%) formed the largest group of respondents. The majority of patients had their pain for more than a year (Table 2) and 41.6% had experienced their pain for more than two years. The pre- and post-*bekam* mean pain scores were  $6.78 \pm 1.78$  and  $2.66 \pm 1.64$  respectively. Twenty eight respondents had completed six sessions of *bekam* therapy and they had a mean pain score of  $2.25 \pm 1.32$  (Table 3). The Wilcoxon Sign Rank test for pain was significantly different ( $p < 0.001$ ) before and after two sessions of *bekam* therapy.

Table 2: Duration of pain and number of therapy sessions undertaken by respondents attending *bekam* clinics

DURATION OF PAIN (MONTHS)	NUMBER OF RESPONDENTS (%)	NUMBER OF THERAPY SESSIONS	NUMBER OF RESPONDENTS (%)
1-3	8 (10.4)	2	30 (39.0)
4-6	12 (15.6)	3-4	21 (27.3)
7-9	5 (6.5)	5-6	3 (3.9)
10-12	5 (6.5)	7-8	4 (5.2)
12-24	15 (19.5)	>8	19 (24.7)
>24	32 (41.6)		
<b>Total</b>	<b>77 (100)</b>		<b>77 (100)</b>

Only 34 patients consumed analgesic medication before starting *bekam* therapy. Twenty-six used paracetamol. Three used ketoprofen gel and one used a combination of paracetamol and ketoprofen gel. Four others used other analgesics. Table 4 shows the amount of analgesic medications the respondents recalled taking, before and after their *bekam* therapy. The consumption of analgesics was also significantly different ( $p < 0.001$ ) by the Wilcoxon Sign Rank test.

**Table 3: Pain score before, after two and after six *bekam* therapy sessions**

ANALOGUE PAIN SCORE	NO. OF RESPONDENTS		
	BEFORE	AFTER 2 <sup>ND</sup> SESSION	AFTER 6 <sup>TH</sup> SESSION
0		4	
1	1	16	9
2		18	9
3	2	20	7
4	5	10	2
5	12	5	
6	9	1	
7	21	2	1
8	14	1	
9	11		
10	2		
Total	77	77	28

**Table 4: Recall of consumption of analgesics before and after *bekam* therapy sessions**

ESTIMATED NUMBER OF DOSES OF ANALGESIC PER MONTH	NO. OF RESPONDENTS	
	BEFORE <i>BEKAM</i>	AFTER <i>BEKAM</i>
90	4	0
60	6	0
30	4	1
24	1	0
20	2	0
16	3	0
12	1	0
8	4	1
4	4	4
3	0	1
2	2	1
1	3	3
<1	–	1
0	43	65

## Discussion

We only included respondents with chronic pain for at least one month to reduce the chance of having patients whose pain may have spontaneously resolved. Nearly 90% of the respondents had pain for more than four months and 61.1% had their pain for more than a year.

We only included respondents who completed at least two sessions of *bekam* therapy because we thought subjects who had only one session might not be able to isolate the effect of their *bekam* therapy from other events they might experience concurrently. However, we realise that this might introduce a bias, as it would exclude those who did not return for a second time because they did not feel much benefit from their first visit. On the other hand it would also exclude patients for whom one session was so effective they did not have to come again. Cost may also be a factor influencing whether a patient returned. Our experience tracing patients indicated that many patients did in fact only attend the clinic once and never returned. Nevertheless we considered it less important to be able to measure the benefit of one therapy session than to be able to say with more certainty whether there was or was not a benefit to a patient who has undergone it twice and therefore could relate their change of status more precisely to their therapy. In addition, although selecting respondents who have had two sessions makes it more likely to pick up people who experienced a positive effect, we thought the ability to detect a positive benefit was more important than the ability to detect the absence of a positive effect.

The decrease in the mean pain score from  $6.74 \pm 1.78$  before *bekam* therapy to  $2.66 \pm 1.64$  after two sessions of therapy and to  $2.25 \pm 1.32$  for the twenty eight respondents who had completed six sessions of *bekam* therapy strongly suggests that *bekam* does give respondents a sense of pain relief, a finding others have reported.<sup>5,9,10</sup> The Wilcoxon Sign Rank test supports that. It would appear that *bekam* does not reduce pain much more after two sessions.

We used the decrease in analgesic use as an additional indicator of pain improvement with a consideration that it might be a more objective piece of evidence. We found that only less than half (44.2%) of our subjects consumed analgesics as most of the subjects went for *bekam* therapy for pain relief because they did not want to take analgesic medication. Our results are encouraging as there is a significant reduction in analgesic consumption after *bekam* therapy.

According to a therapist in the *bekam* clinic, *bekam* can induce “addiction” in the form that pain is temporarily relieved and the patients will come back for more sessions for the “feeling of wellbeing” and most patients claim that the therapy provides short term relieve of pain and they return for the further therapy when they start to experience pain again. The long term effect of *bekam* therapy on pain relieve remains in doubt.

However, we caution any attempt to quantify the amount of pain reduction observed because of the bias discussed above. A randomised prospective clinical trial would be the better study to do, which was unfortunately beyond our resources.

Finally, we wish to note a few other limitations in this study. We did not employ any randomisation and some subjects who fitted the criteria were unwilling to participate in our study. We also noted that the rejection rate was lower in a face to face interview compared to phone interview and this contributed to the difficulties in recruiting subjects as we attempted to recruit subject mainly by phone. The quantifying of analgesic use was by number of tablets and frequency of dosage and did not take into account the type of drug nor its dose. However, no subject reported using a wide variety of analgesics. Almost all kept to their same oral analgesic, so paired samples quantifying before and after comparison was

valid. Another measure which was subjective was the pain score on an analogue scale. It has its limitations as human memory of pain not is completely accurate. Nevertheless, pain is what a subject feels and we cannot be more objective with that in measuring pain. This study we conducted only in the state of Selangor among the urban and semi-urban populations.

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