



## An Audit of the Effectiveness of Acupuncture in a Physical Medicine Rehabilitation Clinic

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### Abstract

This is an audit of 784 patients having received acupuncture treatment in a Physical Medicine & Rehabilitation Clinic of a private hospital in İstanbul between June 2017-September 2019.

**Methods:** Mean age of patients was 40.6 (SD:13.1). 72% were women. The mean number of acupuncture sessions were 4.3 (SD 2.3). Since many patients received acupuncture treatment for more than one diagnosis, evaluations were determined for the total number of 1091 treatments/cases. There were a total of 46 diagnosis, but then grouped as in 10 main parts. The cases according to frequency were ; Back pain (19.7%), neck pain(18%),3- dorsal strain(12.7%), fibromyalgia and anxiety disorders (8.5%), shoulder pain (7.9%), obesity(6.9%), migraine and tension headache (4.5%), ankle-foot pain, and epin calcanei-heel spur(4.5%), knee pain(4.3%),calf pain 32 (2.9%), and others(10.1%). As measuring outcomes, pain level was scored on a Visual Analog Scale(VAS) at the start, and after 3-4 days from the end of sessions. From the difference of VAS, a percentage improvement was calculated. The outcomes for 1091 treatments/cases were: 10 % nil-no improvement; 13% patients minimal (33-50% of improvement); 5% moderate (33-50% improvement); 41% (449) good (51-80% improvement ) ; and 31% (336) excellent ('excellent+good'). The highest success rates were seen in migraine and tension headache(82%), knee pain(81%), fibromyalgia and anxiety disorders(80%) , ankle sprains/foot pain and heel spur(80 %).

**Conclusion:** The high success rates in the audit can be due to the appropriate selection of patients and the fact that PMR clinic is a more specialized one. The audit allowed me to identify the categories which acupuncture had higher success rates.

### Introduction

The aim of an audit is to make a retrospective assessment , to look back, see all the distribution of diagnosis, classification of patients, evaluate frequency of sessions, and see outcome of treatment [1].

This was a retrospective audit of 784 patients having received acupuncture (AP) treatment in a Physical Medicine & Rehabilitation Clinic of a private hospital in İstanbul between June 2017-September 2019. Considering many patients receiving AP treatment for more than one diagnosis and multiple body parts, all evaluations and outcomes were determined for the total number of cases/ treatments which were 1091. For example, if the patient received acupuncture treatment for back, knee and insomnia; it was counted as 3 cases with each outcome considered separate.

The aim of this audit was to make a retrospective assessment , to look back, see all the distribution of diagnosis, classification of patients, evaluate frequency of sessions, and see outcome of treatment, so that I could choose the appropriate patients for AP and also inform them about the outcomes.

### Methods

Only some of the patients applied directly on purpose demanding to receive AP(which were mainly for weight, cessation of smoking, and migraine), the majority were advised by me after their evaluation. Since it was a private hospital, they paid for the sessions, however was a low cost considering private clinics.

**Measuring Outcomes:** Patients were asked to score their pain level on a VAS before the start of the first treatment session. After 3-4 days from the end of acupuncture sessions, their level of pain was recorded again on a VAS, and from the difference of VAS, a percentage improvement was calculated. The percentages were than grouped as: 1-nil: no improvement, 2-minimal: 1-32% improvement, 3-moderate: 33-50% improvement, 4-good: 51-80% improvement 5-excellent: 81-100% improvement.

As success rate >50% improvement was taken which corresponded to the sum of 'good' and 'excellent'.

If the patient didn't come for the followup after the treatment is over, or if he/she didn't complete the treatment, they were called by my assistant to ask for evaluation in terms of VAS and noted.

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**Results**

The audit involved 784 patients, and considering multiple treatments, 1091 cases. There were 9 patients as drop-outs. They were those who didn't come to the controls and who could not be contacted by phone. 7 of them had completed only one session, and 2 had four sessions. These drop-outs were not counted in the statistics and were left out of the audit. After the drop-outs the audit had 784 patients.

The mean age of patients was 40.6 (SD:13.1- range 9-89 years). 72% were women, and 28% men. There were 17 child patients (<18 years).

The mean number of acupuncture sessions were 4.3 (-SD 2.3). The first three sessions were completed every three days, and the remaining sessions once a week. Patients received Electroacupuncture (2/15 Hz intermitant) most of the time, and occasionally manual acupuncture. Sessions lasted 20-30 minutes. Disposable Seirin needles were used. Patient were under observation the whole time.

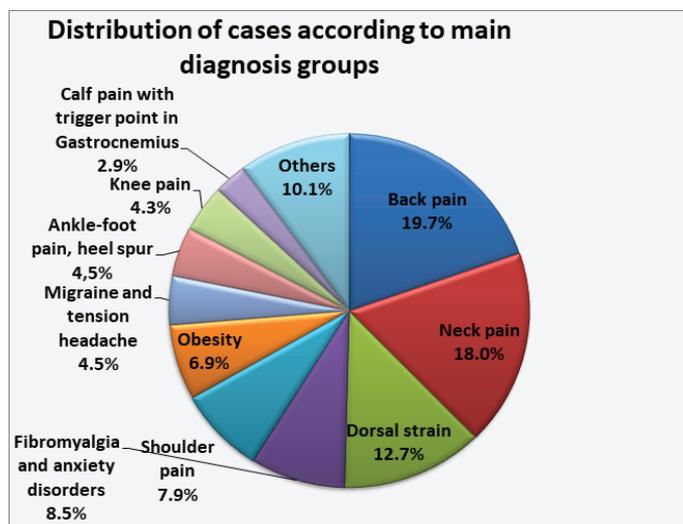
Not too many serious side effects were seen except vasovagal syncope in one patient, slight bruising in 10, forgotten needles among the hairin 5.

There were a total of 46 diagnosis (Table 1).

Afterwards related diagnosis and body parts were grouped in 10 main parts, and remaining small groups accumulated as in category 'others'.

The groups were ; back pain: 215 cases(19.7%), neck pain: 196 cases (18%), dorsal strain-including also costachondral pain, trigger points, and scoliosis: 139 cases (12.7%), Fibromyalgia and anxiety disorders: 93 cases (8.5%), shoulder pain: 86 cases (7.9%), obesity: 75 cases (6.9%), migraine and tension headache: 49 cases (4.5%), ankle-foot pain, and epin calcanei-heel spur: 49 cases (4.5%), knee pain: 47 cases (4.3%), calf pain with trigger point in Gastrocnemius: 32 cases (2.9%), Others :110 cases (10.1%) (Figure 1).

This group 'others' includes various diagnosis such as Bell's palsy, hip pain, lateral epichondylitis , wrist pain, cessation of smoking, facial pain, coccydynia , vertigo , operation on the face , inflammatory bowel disease, hemiparesis , nausea, postmenopausal syndrome, polyneuropathy, carpal tunnel syndrome, asthma, multiple sclerosis, hand-finger pain, allergy, als, restless leg syndrome , trigeminal neuralgia, and dementia.



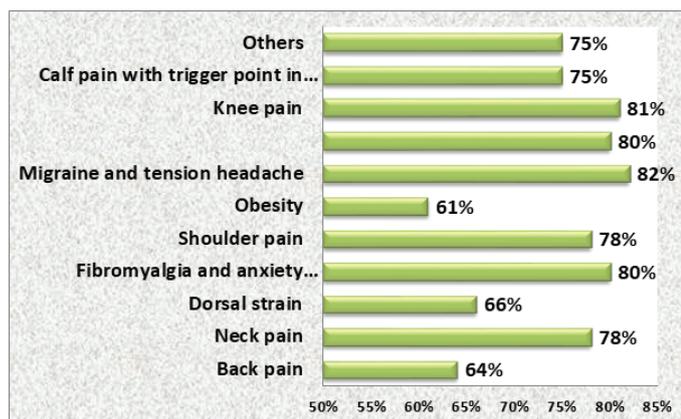
*Figure 1. Distribution of cases according to main diagnosis groups*

*Table 1. Diagnosis of all cases*

Name of Diagnosis	Number of cases/ treatments
1- Cervical strain	136
2-Dorsal strain	115
3-Lumbar hernia	97
4-Shoulder pain	86
5-Lumbar radiculopathy	80
6-Obesity	75
7- Fibromyalgia	60
8- Cervical hernia	60
9- Knee pain	47
10-Migraine	38
11-Calf pain-Gastrocnemius trigger point	32
12-Ankle pain	28
13-Hip pain	22
14-Lumbar strain	21
15-Lateral epicondylitis	16
16-Heel spur	15
17-Scoliosis	14
18-Hand-wrist pain	14
19-Tension type headache	11
20-Chest pain/costochondritis	10
21-Facial pain	10
22-Smoking sessation	10
23-Failed-back surgery	10
24-Panic attack	9
25-Depression	9
26-İnsomnia	9
27-Sacroiliac dysfunction	9
28-Bell's palsy	8
29-Anxiety	7
30-Foot pain	6
31-Operation on the face	6
32-Inflammatory bowel disease	3
33-Coccydina	3
34-Hemiparesis	3
35-Vertigo	3
36-Asthma	2
37-Carpal tunnel syndrome	2
38-Postmenopausal symptoms	2
39-Multiple sclerosis	2
40-Nausea	2
41-Polyneuropathy	2
42-Allergy	1
43-ALS	1
44-Dementia	1
45-Restless leg syndrome	1
46-Trigeminal neuralgia	1

**Table 2.** The overall outcomes

	Number of cases	%
Nil-no improvement (0%)	109	10%
Poor-and moderate improvement (1-50%)	193	18%
Good improvement (51-80%)	449	41%
Excellent improvement (81-100%)	336	31%
TOTAL	1091	100%



**Figure 2.** The success rates for the main 10 diagnosis

**OUTCOMES:**

The outcomes for 1091 cases/treatments were:

10 % (109 treatments) nil-no improvement; 13% (141) minimal improvement; 5% (52 ) moderate; 41% (449) good; 31% ( 336) excellent (Table 2).

Therefore the overall success rate was 72%. (good+excellent). In women it was 73%, while in men was 71.7%

The success rates for the main 10 diagnosis were found as follows:

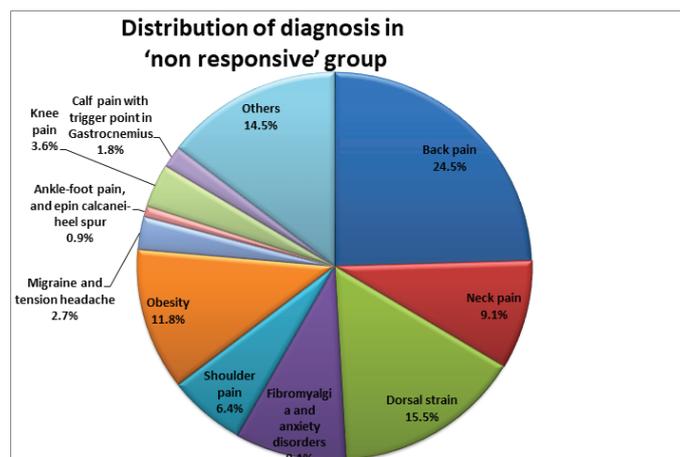
1. For back pain the success rate was 64%.
2. Neck pain : 78%
3. Dorsal strain : 66%
4. Fibromyalgia and anxiety disorders : 80%
5. Shoulder pain :78%
6. Obesity: 61%
7. Migraine and tension headache : 82%
8. Ankle sprains/foot pain and heel spur: 80 %
9. Knee pain: 81%
10. Calf pain and trigger point in Gastrocnemius 75%

Others: 75%

The very best results among first 5 was:

- 1st : Migraine and tension headache 82%
- 2nd : Knee pain 81%
- 3rd : Fibromyalgia and anxiety disorders 80%
- 4th : Ankle pain-sprains/foot pain and heel spur 80%
- 5th : Neck pain 78%

When I evaluated the outcome including the single cases in the smaller groups inside the group 'others', the diagnosis showing highest percentage of 'excellent improvement(>81%)' were: Bell's palsy, ( 70% of patients with excellent improvement); 60% of patients treated for cessation of smoking, 67% of vertigo patients; 67% enflamatuary bowel disease patients; and 53% of ankle pain patients.



**Figure 3.** Distribution of diagnosis in 'Non-Responsive group'

**Non-Responsive Patients**

The patients who didn't heal at all were 110 cases (Figure 3). The mean age of this group was 41.4. Mean duration of pain was 33.2 months, and mean number of sessions was 4.3. The majority had 1 or 2 sessions.

**Paediatric patients**

22% of all cases 17 patients were under 18 years old.The youngest was. Their diagnosis were: 7 cases obesity, 3 cases Bell's palsy, 3 cases cervical pain, 1 case facial pain, 1 case dorsal strain, and 1 case lumbar strain. The overall success rate ( excellent+good improvement) was 71%.

The outcomes were: 7 patients 'excellent', 5 patients 'good', 1 patient 'moderate' and 4 patients 'minimal improvement'.

**Discussion**

In this audit, as success rate I took into consideration the improvement >50%, which corresponded to 'good + excellent' because : according to my clinical experiences, 50% is the minimum cut off for a satisfactory response, and patients don't seem satisfied when the pain reduction is less than 50%.

In my audit, the distribution of gender was 2.6/1(Women versus Men). This is because clinical pain is reported with higher severity and frequency, longer duration, and present in a greater number of body regions in women than in men. Being exposed to repeated painful visceral events (eg menses,labour) during life may contribute to an increased sensitivity to, and greater prevalence of pain among women [2].

Looking overally in literature, there are not too many audits of large numbers as in mine.

In the survey of Hopton et al. [3] the most common diagnosis having acupuncture were musculoskeletal diseases as first, headache as second; depression/anxiety disorders as third. While in the audit of J. Freedman [4], the most common diagnosis were neck pain, low back pain, shoulder problems, hayfever, knee osteoarthritis, and migraine. In this audit of Freedman, overall success rate was 61%, and the highest percentage 'significant improvement' or 'cure' were for premenstrual syndrome (83%) and migraine(83%). In my audit the overall success rate was 72%, and the 'excellent+ good' improvement was seen mostly in migraine (82%) followed by knee pain (81%), and then fibromyalgia (80%).

In another audit of A.Stellon [5] based on 140 patients, neck pain and back pain were the most common diagnosis. 'Measure yourself Medical Outcome Profile' (MYMOP)

questionnaire was used instead of VAS for pain which I used. The mean number of acupuncture treatments was 4 (range 1 to 10), same as my audit. 31% of patients no effect, 31% were improved, and 38% were much improved whereas in my audit was 10% no effect, 41% improved, and 31% much improved. Success rates are similar except 'no effect group', which may be due to different measurement tools or difference in duration of symptoms because here mean duration of symptoms was 3 months (range 2 to 52 weeks) whereas in my audit was 31 months (more chronic pain). Even if the mean duration of pain in my audit was a lot longer (31 months versus 3), non-healed patients were less (10% versus 31%) compared to the audit of Stellon. Which shows that acupuncture can be an encouraging treatment for chronic pain patients.

In another audit of Kam E.C. et al [6] based on 92 patient records, the main conditions treated were: 23% backache, 18% neck pain, 13% shoulder pain, and 8% headaches which had similarities with my audit. The benefit was based on the last recorded entry in the patient notes or calling the patients. The reported treatment benefit was 34% excellent, 35% good, and 31% poor, Similarly in my audit 31% was excellent, 41% was good, and 30% was poor. In this audit the success rate was 69%, and similarly in mine was 72%.

Evaluating the audits in acupuncture in paediatric population [7-9] the most common diagnosis were for : allergic rhinitis, constipation, infantile colic, and attention deficit hyperactivity disorder(ADHD). Whereas in mine the majority of cases were obesity, and Bell's palsy.

### **Conclusion**

This audit included a large variety of patients (46 different diagnosis) predominantly musculoskeletal pain, and a high number of cases (1091). Success rates were similar to other audits, however the percentage of 'non responders' was less. (10%) The high success rate and few nonresponders can be related to the appropriate selection of patients in the PMR clinic other than general primary care.

The audit allowed me to see the diagnosis where acupuncture achieved the greatest success rates. Therefore it enabled me to advise and inform my patients about ; which diagnosis acupuncture is most reliable, that even very few sessions may be enough for improvement, and that they should not be pessimistic for the chronicity of their pain or for being old, since these were not negative factors for improvement.

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