

DEVELOPMENT AND VALIDATION OF AN INDEX FOR EVALUATING THE QUALITY OF ACUPUNCTURE ARTICLES

DESENVOLVIMENTO E VALIDAÇÃO DE UM ÍNDICE PARA AVALIAÇÃO DA QUALIDADE DE ARTIGOS DE ACUPUNTURA

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ABSTRACT

Introduction: results from acupuncture studies may be quite dissonant, from extremely to very little effective. Indexes and checklists are constantly used for evidence-based medicine in order to evaluate the quality of a trial. In spite of that, there is no data on an index developed for evaluating the acupuncture technique. **Methods:** a literature review was performed; the main items regarding the technique were chosen and a score was attributed to each, based on the Jadad Scale. The index was then evaluated by three experienced acupuncturist, who could suggest modifications and enhancements, and applied it in ten different articles. Their scores for each article and item were compared. **Results:** the index consists of 6 items, scoring from 0 to 13 in the first part, and 2 items, scoring from 0 to 8 in the second. The statistical comparison presented homogeneity in the total results and specifically in every question between evaluators. **Discussion:** the index showed to be easily applied and subjective only when previous knowledge from the evaluator is needed in certain items. However, when applied only according to what is informed in the article, even a non-specialist can use it. **Conclusion:** we created an index of acupuncture technique adequacy that may be used by specialists and non-specialists, with relative subjectivity that does not influence homogeneity in scoring by different evaluators.

Key-words: acupuncture, meta-analysis as topic, methodology, research.

RESUMO

Introdução: resultados de estudos de acupuntura podem ser muito destoantes, desde extremamente até muito pouco efetivos. Índices e *checklists* são constantemente usados para medicina baseada em evidências de forma a avaliar a qualidade de um estudo. Apesar disso, não há informações sobre um índice desenvolvido especialmente para avaliar técnicas de acupuntura. **Métodos:** uma revisão de literatura foi realizada; os principais itens concernentes à técnica foram escolhidos e pontuados, baseados na escala de Jadad. O índice foi, em seguida, avaliado por três acupunturistas experientes, que poderiam sugerir modificações e melhorias, e o aplicaram em dez artigos diferentes. **Resultados:** o índice consiste de seis itens, pontuando de 0 a 13 em sua primeira parte; e dois itens, pontuando de 0 a 8 em sua segunda. A comparação estatística apresentou homogeneidade nos resultados totais e mais especificamente em cada questão entre avaliadores. **Discussão:** o índice mostrou ser facilmente aplicado e subjetivo apenas quando o conhecimento prévio dos avaliadores é necessário em certos itens. Entretanto, se aplicado apenas de acordo com o que é informado no artigo, mesmo um não-especialista pode usá-lo. **Conclusão:** nós criamos um índice de adequabilidade da técnica de acupuntura que pode ser usado por especialistas e não-

especialistas, com subjetividade relativa que não influencia a homogeneidade da pontuação entre diferentes avaliadores.

Descritores: acupuntura, metaanálise como assunto, metodologia, pesquisa.

INTRODUCTION

Acupuncture is a technique from Traditional Chinese Medicine (TCM) that has been used for over millennia. It has its own physiopathological theories that influence its diagnosis and treatment. In spite of seeming relatively simple when compared to Occidental and allopathic medicine, acupuncture presents a wide range of possible interventions, especially concerning treatment.

Randomized controlled trials (RCT) are efficacy studies considered to be higher level of evidence nowadays. They can be pooled in meta-analysis (MA), so as to define the best existing evidence towards a certain intervention. However, a minimum homogeneity is necessary in order to pool such studies; otherwise their results will be compromised.¹⁻⁴

Results from an acupuncture study might be quite dissonant: from extremely effective as analgesia for short procedures,^{5,6} up to very little effective for the treatment of sequelae from a stroke.⁷ However, the difference in such cases may be beyond an inefficacious technique; it may be due to a negligence of basic criteria from the TCM, apart from low methodological quality.^{8,9}

Indexes and checklists are constantly used for evidence-based medicine in order to evaluate the quality of an article:¹⁰ either concerning the methodology, or the quality of the items presented in the final article, which is essential for the achievement of the study's full potential and avoidance of biases. As for acupuncture, however, we could not find an index that evaluates the methodology of the performed technique yet, even though there are several efforts, especially concerning the elaboration and the presentation of an RCT from this area.¹¹⁻¹⁵

This article presents an index specifically created to evaluate the adequacy of the acupuncture technique in RCTs, considering the TCM theory.

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METHODS

This study was approved by the Committee of Ethics in Research from Faculdade de Ciências Médicas de Sorocaba, in 2011.

A literature review was performed including the main textbooks of acupuncture used in Brazil,²⁶⁻²¹ articles from Medline, Cochrane library, PubMed, LILACS, IBEC and Scielo of specialists recommendations regarding the technique,^{8,12,13,17-19} and concerning the physiological mechanisms of acupuncture.²²⁻²⁸ Only articles in English, German, Spanish, Portuguese, Italian or French were included for analysis; few, however, were excluded due to language limitations (either in Chinese or Japanese).

The main items regarding the technique were chosen and listed; to each of them a score was attributed, representing its importance according to the technique performed. How to score each item was based mainly on Jadad scale,²⁹ according to which the item should receive the worst score, if the information is not given.

Next, the index was evaluated by three acupuncturists with clinical experience, who could make suggestions on the

items and scores. The acupuncturists tested the index in five different articles, in order to be familiarized with it and solve possible questions, and then applied it to ten different articles, in order to evaluate the concordance among evaluators. For each article, only information concerning the methodology was extracted; there was no mention to authors, journal, country or year of publication or any outcome or result, as to avoid possible biases.

RESULTS

The complete index is presented in figure 1; its score grades from 0 to 13 on its first part, and 0 to 8 on the second. The index presented homogeneity in the total results ($X^2 = 1.40$, $p = 0.4966$ in the comparison between evaluators) and specifically in every question between evaluators (Table 1). This represents that, in spite of its relative subjectivity, the index may be scored by different evaluators without any compromising of its function.

Figure 1. Index of acupuncture technique adequacy

Item	Value	Observations
1. Characteristics concerning the technique		
a. Diagnosis and point-selection according to patterns from TCM	4	a) Consider acute pain as "Local blood and Qi stagnation", what may be treated either locally or systemically. b) If the points selected may resolve only part of the pattern and its adequate treatment, score 2.
b. De Qi achievement	3	
c. Length/Frequency of sessions	1	
d. Adequate manipulation of needles during session	1	a) Consider as adequate frequency of manipulation of needles during the session. b) For electroacupuncture, evaluate if the wave type is adequate.
e. Adequate frequency of spins	1	a) Whether reinforcing, reducing or balancing. b) For electroacupuncture, evaluate if the frequency is adequate to the stimulus.
f. Duration of treatment according to recommendations of TCM for the pattern	3	
Total:	13	
2. Characteristics concerning the follow-up		
a. Evaluation of success through examination and confirmation of pattern resolution	4	a) Confirmation through tongue and/or pulse diagnosis.
b. On the follow-up, re-evaluation was performed according to pattern diagnosis	4	a) Re-evaluation through anamnesis, tongue and/or pulse diagnosis.
Total:	8	

INSTRUCTIONS ON HOW TO APPLY THE INDEX

Details concerning the index application

- 1) If the therapy uses both traditional acupuncture and electroacupuncture, the evaluator should score separately for each and, if both were performed together, add up and divide by two.
- 2) If there is not enough information to score an item, it should be considered 0.
- 3) The adequacy of information must be evaluated from what the article contains or, when impossible, from the knowledge of the evaluator. That is: if the article states that St36 was reinforced, it must explain the reason why, taking into consideration what is being studied. If it was not explained, the evaluator must consider whether it is or not compatible with the study. If it is not explained nor compatible, or the evaluator does not know, the item should be scored 0.

Details on scores for each item

- 1a. The evaluator should search for information on point-selection and diagnosis based on TCM theory. If there is, the item is scored 4. If not, the evaluator must analyze the points used and whether they are compatible with the study or not (either by the pattern or Chinese diagnosis from the text, or based on the evaluator's knowledge). Once there is compatibility, score 4. If the points suffice the pattern only partially or only part of all patterns, score 2. If there is no description of points used or is stated that the TCM theory was not considered in the study, the item is scored 0.
- 1b. If the article mentions De Qi achievement in every point, score 3. If not, score 0.
- 1c. The evaluator must analyze whether session length

and/or its frequency were adequate to the treatment; if at least one of these was adequate, score 1. If not, score 0.

1d. When evaluating traditional acupuncture, the evaluator must search for manipulations during the session and whether they had an adequate interval between them, according to TCM. If electroacupuncture was used, the evaluator must analyze if the type of wave used was adequate. If adequate, score 1; if not, score 0.

1e. Evaluate if the method of needle manipulation in each point (reinforcing, reducing, balancing) was adequate to the study. As for electroacupuncture, evaluate if the frequency of stimulus in hertz was adequate. If it was so in all or most points, score 1; if not, score 0.

1f. Evaluate whether the length of treatment was based on the patterns from TCM and the necessary time to treat them. If it is not mentioned, the evaluator must analyze if the treatment could treat the compatible pattern with the sessions stipulated (such evaluation is valid especially for the treatment of acute pain and must be based on the evaluator's clinical experience). If it was adequate, score 3; if not, or if the evaluator does not know (when there is not enough information), score 0.

2a. The evaluator should search for in the article if the success of treatment or resolution of symptoms were mentioned and/or evaluated according to the resolution of the respective Chinese patterns. If yes, score 4; if not, score 0.

2b. When, during the follow-up, the pattern was re-evaluated, in order to define whether there was any change for worse, better or stable, score 4. If not, score 0.

Table 1. Score of each item and statistical analysis by Friedman's analysis of variance test according to each article and evaluators

Item	Evaluator	Art1	Art2	Art3	Art4	Art5	Art6	Art7	Art8	Art9	Art 10
1a	1	2	2	4	2	4	4	4	4	4	4
	2	2	2	4	2	0	4	0	2	4	0
	3	2	4	4	2	4	4	4	2	4	4
1b	1	3	3	3	0	3	3	3	0	3	0
	2	3	3	3	3	3	3	3	0	3	0
	3	3	3	3	3	3	3	3	0	3	0
1c	1	1	1	1	0	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1
	3	1	1	1	1	1	1	1	1	1	1
1d	1	0	0	1	0	0	1	1	0	1	0
	2	1	1	1	0	0	1	1	1	1	0
	3	1	1	1	1	1	1	1	1	1	0
1e	1	0	0	1	0	0	1	1	0	0	0
	2	0	1	1	0	0	1	0	1	1	0
	3	0	1	1	0	1	1	1	1	0	0
1f	1	0	0	3	0	3	3	3	0	3	3
	2	0	0	3	0	0	3	0	0	3	0
	3	0	3	3	0	3	0	3	0	3	3
2a	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0
2b	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0
P:		0.91	0.32	1.00	0.51	0.32	0.91	0.68	0.91	0.91	0.68
Total:	1	6	6	13	2	11	13	13	5	12	8
P:	2	7	11	13	6	4	13	5	5	13	1
0,49	3	7	13	13	7	13	10	13	5	12	8

DISCUSSION

The index showed to be easily applied and subjective only when previous knowledge from the evaluator is needed in certain items. However, when applied only according to what is informed in the article, even a non-specialist can use it. It was created so that it can be applied in any article of acupuncture, even if it has not presented all the minimum information necessary for the evaluation. It can also be adapted to be used in different schools of acupuncture (japanese, chinese, etc.), as long as differences are considered.

The importance given to each item is supported by TCM philosophy: major importance is given to adequate point-selection, according to TCM theory and patterns. Next, equal importance is given to length of treatment and De Qi achievement, which means in all of the acupuncture techniques that the point is being stimulated. Minor importance was given to data on needle manipulation, length of session and spins frequency, once such characteristics are different among acupuncturists. When added together, their score is equivalent to De Qi achievement. Score was also based on scientific evidence for each of the items; for now, there is more evidence concerning the importance of De Qi achievement than of "minor" data concerning needling techniques.

As for the second part of the index, based mainly on TCM theory, there was no study among those evaluated by the specialists or among those reviewed regarding these characteristics of treatment. However, taking into account that these information are essential in order to evaluate whether the treatment was adequate or not, such items must remain, especially as a kind of memo for the researchers to use it in their research methodology.

This index was created to be also used as a checklist to evaluate if all the essential items for the study methodology (according to the TCM theory) are adequate.

A cut-out score was not calculated yet; it is however conceivable that the higher the score, the more effective the treatment will be, when compared to placebo.

CONCLUSION

We created an index of acupuncture technique adequacy that may be used by specialists and non-specialists, with relative subjectivity that does not influence homogeneity in scoring by different evaluators. The authors recommend that this index is used not only in systematic reviews and MA, but also by physicians in their practices, in order to evaluate the quality of the articles they are reading, and researchers, as a checklist before beginning a study in acupuncture.

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PEDIDO DE CASAMENTO

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