Overview of Treatment Guidelines and Clinical Practical Guidelines That Recommend the Use of Acupuncture: A Bibliometric Analysis

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Abstract

Introduction: As positive evidence emerges for the use of an intervention to treat a health problem, the intervention gradually becomes incorporated into treatment guidelines (TGs) or clinical practice guidelines (CPGs) that are related to that health problem. To assess whether this general hypothesis can apply to acupuncture, 96 health problems were identified for which positive conclusions in systematic reviews and meta-analyses regarding the effectiveness of acupuncture have been made and then searched for TGs or CPGs that have recommended the use of acupuncture.

Methods: Through August 31, 2017, searches were performed in relevant medical databases and Google using “treatment guideline,” “clinical practice guideline,” and the names of the 96 medical conditions as search terms. A “snow-balling” search approach was adopted. All positive recommendations were added into the registry.

Results: A total of 1311 publications were found that recommended using acupuncture published between 1991 and 2017. The number per year reached 50 in 2005 and 100 in 2009. In addition, 2189 positive recommendations were found for the use of acupuncture. Of these, 1486 were related to 107 pain indications and 703 were related to 97 nonpain indications. These recommendations were made by a wide range of groups, such as government health institutions, national guideline, and medical specialty groups. The recommendations came from around the world but were especially abundant in North America, Europe, and Australasia.

Discussion and Conclusion: Considerably more recommendations were found for the use of acupuncture than are known within the acupuncture or medical communities. A trend by year was also found; a rise in the number of positive statements about acupuncture was typically followed by a rise in the number of recommendations of acupuncture. Thus, the recommendations followed the emergent evidence for acupuncture. Better implementation plans need to be developed for the CPG/TG recommendations about acupuncture to be more effective/efficient.

Keywords: clinical practice guideline, treatment guideline, acupuncture, systematic review, recommendation, snowballing method

Introduction

When evidence of the effectiveness of a therapy emerges with evidence of the safety and cost-effectiveness of the therapy, medical treatment guidelines (TGs) or clinical practice guidelines (CPGs) should start to begin recommending the therapy, even when the evidence is not yet strong.¹ Acupuncture has been tested in many clinical trials since the mid-1970s. In 2010, the Australian Department of Veterans Affairs found acupuncture to be effective for four conditions and trending toward effectiveness for one condition.² A 2012 review of acupuncture for chronic pain conditions found it to be effective for a number of chronic pain conditions.³ In their 2014 synthesis of evidence for the

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U.S. Department of Veterans Affairs, Hempel et al. found that acupuncture was effective for three conditions, trending toward effectiveness for 20 conditions and was mixed positive for another 23 conditions. In their 2017 review, McDonald and Janz found that acupuncture was effective for 8 conditions, trending toward effectiveness for another 38 conditions and was mixed positive for another 70 conditions. Acupuncture has also been found cost-effective for several pain conditions and several nonpain conditions. Over the past 30 years, researchers have consistently shown that acupuncture is a safe therapy, when administered by properly trained practitioners. However, little has been known about the number of CPGs and TGs that include acupuncture.

CPGs are defined as “systematically developed statements to assist practitioners and patients’ decisions about appropriate health care for specific clinical circumstances.” CPGs tend to be more scientific and involve much time and work to complete. TGs in contrast tend to be less scientific and focus on providing clinical recommendations directly to healthcare practitioners often using nonacademic media for dissemination such as Medical Society websites, medical journals, and medical expert websites. They may not present evidence for their recommendations, focusing instead on easier-to-use document format. Systematic reviews (SRs) and meta-analyses (MAs) examine the relative effectiveness of an intervention, CPGs/TGs compare this evidence and the evidence of relative safety and cost-effectiveness with the evidence for the other interventions used for the same medical condition. CPGs/TGs are usually developed by specialists who are experts in the medical condition and who try to examine all levels of evidence for each intervention to compare the interventions head to head, which allows more real-world assessments of each therapy. In 2012, Hughes and White briefly searched PubMed to determine how many clinical guidelines could be found that recommended acupuncture, these authors found 14 publications that recommended acupuncture for 10 different medical conditions. A recent article on acupuncture and pain suggested that the number of guidelines for acupuncture was underestimated. In a recent study, Cho et al. examined the extent to which CPGs reflected the actual evidence found in SRs and MAs for lower back pain. This review found six CPGs that recommended acupuncture and further concluded that current CPGs did not fully reflect the levels of evidence for acupuncture.

Given the emergent evidence base for the effectiveness, safety, and cost-effectiveness of acupuncture and contradictory claims about acupuncture and CPGs, the primary aim of this study is to explore the extent to which acupuncture has been recommended as a treatment option in TGs or CPGs. As a secondary aim, the timeline was examined for the CPGs/TGs that were found to explore whether they are related to the emerging evidence of effectiveness.

Methods

The term “acupuncture” was used to include the use of acupuncture needles applied manually or with electrical stimulation anywhere on the body and regardless of theoretical framework. Any publications that describe treatments using laser type acupuncture only, moxibustion only, or acupressure/massage only were not included.

The first author reviewed his database of SRs, MAs, and other review articles to identify publications that concluded acupuncture to be effective or to show positive evidence of effectiveness (trend positive) for a particular condition. “Trend positive” review publications include those that found positive studies, especially related to the primary outcomes but of insufficient number or quality. They usually conclude that more research is needed to clarify their findings. Trend positive reviews are included since authors of guidelines may have little evidence of effective or available treatment options for a particular problem and may thus recommend those therapies at that time.

To locate TGs or CPGs that recommended the use of acupuncture treatment, searching core databases, including Medline, Cochrane library, and Embase, using a recommended searching strategy as for SRs was not productive since acupuncture was not listed as a search term alongside most published CPGs and TGs. Furthermore, many publications, especially TGs, can be found online and published for ease of public access rather than for academic purposes, and these publications usually were not listed through the mentioned medical databases. Thus, a search was conducted that was based mainly on the snowballing approach, following links in one publication to other publications or websites and then searching those publications and websites.

After first identifying the 96 conditions shown in Appendix 1, TGs or CPGs related to each were then searched. These were located through electronic searching of the core databases and through hand searching of national guideline clearing houses or agencies for health technology assessment, such as GIN, NICE, AHRQ (https://effectivehealthcare.ahrq.gov), and SIGN. Hand searching of Google was used to search for TGs or CPGs for each condition. For the 96 conditions, “condition (or disease)” and “clinical practice guideline” or “treatment guideline” were used as the search terms. For example, back pain was searched by “back pain” and “treatment guidelines” or “clinical practice guidelines.” As part of this snowballing search, publications with recommendations about the overall uses of acupuncture rather than specific to a particular symptom were also included. For CPGs/TGs in China and South Korea, experts were consulted to track down the few documents that have been published.

All publications that were found were then examined to determine whether they were making treatment recommendations about the use of acupuncture. These were then carefully read to see whether the authors recommended acupuncture for use in treating any conditions. All positive recommendations for acupuncture are listed, and through this process, a specialized registry of CPGs/TGs for acupuncture was developed. All updates from the same source as separate publications were included. Many publications made multiple recommendations for the use of acupuncture.

Results

Tracking review publications of the effectiveness of acupuncture, by August 31, 2017, 96 conditions were identified for which reviews had found positive evidence or indications of emerging (trend) positive evidence. These positive or trend-positive statements were published between 1996 and 2017 (Appendix 1). The number per year can be seen as the line graph in Figure 1. Searching on the basis of these 96 conditions, 1311 TGs or CPGs were found that recommended...
the use of acupuncture. These TGs and CPGs were published between 1991 and 2017. The number per year reached 50 in 2005 and 100 in 2009. The bar graph in Figure 1 shows the number of recommendations by year and according to pain and nonpain conditions. A total of 2189 positive recommendations were found for the use of acupuncture. Of these, 1486 were related to 107 pain indications and 703 were related to 97 nonpain indications (Fig. 1).

The recommendations came from many sources: National Government Departments of Health or Ministries of Health, State Departments of Health, state reimbursement systems, national guideline groups, national expert groups, international expert groups, insurance companies, single or group authors, and on-line patient support groups. Appendix 2 gives examples with references for each source type.

It was observed that the number of recommendations in one year (2005) reached 50, when positive or trend-positive conclusions emerging in review articles were clearly increasing in number (see the black line charting these numbers in Fig. 1). In addition, ~87% of the 2189 recommendations were related to the 96 conditions in Appendix 1. The graphic in Figure 1 shows that the rise in the number of recommendations generally follows the rise in the number of positive or trend-positive statements about acupuncture effectiveness, which supports the notion that the recommendations follow the evidence. The recommendations came from around the world but were especially abundant in North America, Europe, and Australasia.

Discussion

To the authors’ surprise, a considerable number of recommendations were found for the use of acupuncture. This search identified 1311 publications covering a 27-year period that have made 2189 positive recommendations for acupuncture for 204 health problems. Hence, the authors' findings are not in line with previous claims that the number of recommendations for acupuncture is less than the evidence suggests they should be21,22 and far exceed the earlier search the authors found.20

Claims of publication bias in acupuncture-related research have been made, especially in Asia.23 It was found that only a small percentage of the guideline recommendations were published in Asia. The conventional medical communities that write CPGs in Korea and China, for example, do not generally include acupuncture in their considerations,1 and thus, the authors do not see this publication bias in the CPG/TG recommendations.

In this article, the authors have addressed the question of the extent to which medical groups have recommended the use of acupuncture. The authors did not include or specifically search for publications that recommend not to use acupuncture because it was not found effective or had insufficient evidence. This issue will be dealt with in later publications.

Moreover, the medical, research, and acupuncture communities are not aware of the extent to which acupuncture is recommended as a treatment in clinical guidelines, as evidenced by the few recommendations found in the 2012 search.20 It was found that the authors’ regular search of relevant databases did not identify many publications and that more complex and innovative strategies were necessary to locate these publications. This difficulty suggests one possible reason for the lack of knowledge in the medical, research, and acupuncture communities. Another reason is likely to involve problems in guideline implementation. If the acupuncture
community as a stakeholder is not included in the guideline development group, implementation will obviously be hampered. Many guidelines were apparently written with insufficient acupuncture expert consultation such that acupuncture practitioners and their organizations did not know about them and could not act on them. Based on this, it was suggested that when developing CPGs/TGs that review the evidence for acupuncture, a person with profound knowledge about acupuncture and research should be involved. Furthermore, an important step will be to develop better implementation strategies, given the number of recommendations for the use of acupuncture that the authors have found.

Limitations

Although creative search strategies were employed, the availability of publications has been a problem. The primary language for the search was English. Publications in many countries were inaccessible due to this language constraint, and thus, it was hypothesized that there are more publications that recommend acupuncture than the authors have found. For example, in Israel, acupuncture is increasingly used in hospitals, and thus, there are likely to be CPGs/TGs recommending acupuncture; however, publications are inaccessible to us because the reports are in Hebrew. In addition, no funding was received for this project, and thus, publications that required payment to download were not available to us, increasing the risk of missing other recommendations for the use of acupuncture.

Lastly, the quality of the evidence used or the strength of the recommendations in the publications that we found using grading of recommendations assessment, development, and evaluation was not evaluated. Furthermore, the quality of the CPGs/TGs using the appraisal of guidelines for research and evaluation criteria was not evaluated. The present recommendations for the use of acupuncture range from very weak potential treatment options to first-line treatment options, with a wide range of evidence levels presented in support of the recommendations. In addition, not including negative recommendations for the use of acupuncture might seem to skew the results. The authors plan to start addressing this in future work.

Future Research Implications

The authors are currently examining the publications they found to extract detailed information on other parameters, such as the clinical questions, direction of the recommendation, funding agency, and development groups. In addition, the authors are planning to publish a registry of acupuncture-related CPGs/TGs. Furthermore, this registry will be continuously updated by systematically examining future publications.

Conclusions

This search has found a surprisingly large number of recommendations (2189) for the use of acupuncture for over 200 health problems. These recommendations are mostly related to the emergent evidence of the effectiveness of acupuncture (87%).

Considerably more recommendations for the use of acupuncture were found than is known within the acupuncture community or medical community. This suggests that medical healthcare providers around the world have begun incorporating or are seeking to incorporate acupuncture widely into healthcare but have not sought sufficient collaboration with the acupuncture community to enable the effectiveness of acupuncture. Thus, medical authorities need to develop better implementation plans to make the CPG/TG recommendations more effective.

Author Disclosure Statement

No competing financial interests exist.


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Appendix 1

Positive or Trend Positive Conclusions in Favor of the Effectiveness for Acupuncture from Reviews of the Clinical Trial Literature

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<td>Olivera et al., A216</td>
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<td>68</td>
<td>Pain in the elderly</td>
<td>Park and Hughes A217</td>
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<td>69</td>
<td>Parkinson’s disease</td>
<td>Lee and Lim, A218 Zhang et al., A219</td>
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<td>70</td>
<td>Polycystic ovary syndrome</td>
<td>Aquine and Nori, A220 Ren et al., A221</td>
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<td>71</td>
<td>Phantom limb pain</td>
<td>Mannix et al., A222</td>
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<td>72</td>
<td>Plantar heel pain</td>
<td>McDonald and Jazn, A6 Hempel et al., A11</td>
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<td>74</td>
<td>Postoperative dental pain</td>
<td>McDonald and Jazn, A6 Chiu et al., A63 Cho et al., A224 Cho et al., A232 Kim et al., A233 Sun et al., A235 Tedesco et al., A235 Wu et al., A236 Lee et al., A237</td>
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<td>75</td>
<td>Postoperative gastoenteritis</td>
<td>Lee et al., A237</td>
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<td>76</td>
<td>Postoperative pain</td>
<td>McDonald and Jazn, A6 ADVA, A4 McDonald and Jazn, A6 Hempel et al., A111 Selva Olid et al., A191 Close et al., A238 Ee et al., A239 Gutke et al., A240 Liddle and Pennick, A241 Stones and Vits, A242 Young and Jewell A243 Tsai et al., A186 Cooper et al., A244</td>
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<td>77</td>
<td>Poststroke neurogenic bladder</td>
<td>Wang and Bao, A17 Cassileth and Yaret, A62 Standish et al., A71 Furness et al., A251 Hanchanale et al., A252 Lovelace et al., A253 Zhuang et al., A254</td>
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<td>78</td>
<td>Poststroke spasticity</td>
<td>McDonald and Jazn, A6 Hempel et al., A11 DVAAG, A245 Grant et al., A246 Kim et al., A247 Wahbeh et al., A248 Tao et al., A249</td>
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<td>79</td>
<td>Pregnancy-related pelvic back pain</td>
<td>Lee et al., A249 Li et al., A250</td>
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<td>Premature ejaculation</td>
<td>Wang and Bao, A17 Cassileth and Yaret, A62 Standish et al., A71 Furness et al., A251 Hanchanale et al., A252 Lovelace et al., A253 Zhuang et al., A254</td>
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<td>81</td>
<td>Post-traumatic stress disorder</td>
<td>McDonald and Jazn, A6 Hempel et al., A11 DVAAG, A245 Grant et al., A246 Kim et al., A247 Wahbeh et al., A248 Tao et al., A249</td>
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<td>82</td>
<td>Quality of life</td>
<td>Cho et al., A429 Li et al., A250</td>
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<td>83</td>
<td>Rheumatoid arthritis</td>
<td>McDonald and Jazn, A6 Vickers et al., A50 Yin et al., A52 Yuan et al., A54 Dong et al., A259 Green et al., A260</td>
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<td>84</td>
<td>Radiation-induced xerostomia</td>
<td>McDonald and Jazn, A6 Vickers et al., A50 Yin et al., A52 Yuan et al., A54 Dong et al., A259 Green et al., A260</td>
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<td>85</td>
<td>Restless legs syndrome</td>
<td>Lv et al., A261</td>
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<td>86</td>
<td>Schizophrenia</td>
<td>McDonald and Jazn, A6 Hempel et al., A11 Tahir et al., A262</td>
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<td>87</td>
<td>Sciatia</td>
<td>(continued)</td>
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</table>
Examples of Sources of Clinical Practice and Treatment Guideline Publications

National Government Department of Health or Ministry of Health


State Department of Health/State Reimbursement System

The Department of Health of South Australia has recommended acupuncture for five symptoms, whereas the Department of Health of Western Australia has recommended acupuncture for two symptoms. The Canadian state of Alberta has recommended acupuncture for five symptoms, whereas the British Columbia Cancer Agency has recommended the use of acupuncture for three symptoms in cancer care. In 2013, the Oregon Health Authority recommended acupuncture for at least nine different conditions. In 2009, the Malaysian Association for the Study of Pain recommended acupuncture for back pain.

National Guideline Group

A 2014 Austrian Health Technology assessment recommends acupuncture for 11 different conditions. In 2007, the Socialstyrelsen (Swedish National Board of Health and Welfare) recommended acupuncture for pregnancy-related back pain. In 1999, the Danish Institute for Health Technology Assessment recommended acupuncture for back pain. In 2013, the Scottish Intercollegiate Guideline Network recommended acupuncture for back pain and knee osteoarthritis in their clinical practice guideline on chronic pain.

Appendix 2
insurance company BUPA recommended acupuncture for six conditions in 2011. A312

Single or Group Authors


Online Patient Support Groups


Appendix References


A129. Yang L, Yang Z, Yu H, Song H. Acupuncture therapy is more effective than artificial tears for dry eye syndrome:


