

Research

Literature



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Research is the systematic and rigorous process of enquiry which aims to describe phenomena and to develop explanatory concepts and theories (Bowling 1997). A research question should be feasible, of interest to the researcher, original, relevant and ethically sound (Sim and Wright 2000). Evidence based health care involves the conscientious, explicit and judicious use of current best evidence about care of individual patients (Sackett et al 1996). In order to approach evidence based care in an evidenced based way the evidence available needs to be reviewed.

A health care professional which practices in an evidence based way continues to improve their knowledge base and increase confidence and clinical decision making. One of the most significant causes of suffering and distress in the UK is chronic pain. Most diagnoses are for back pain, arthritis and widespread joint pain (National Institute of Neurological Disorders and Stroke (NINDS 2008). Between 5 and 10 per cent of people have chronic pain with no formal diagnosis (Nursing Standards 2010). This does not mean that their pain is imaginary.

McCaffery said: ' Pain is what the experiencing person says it is and exists whenever the experiencing person says it does' (McCaffery and Pasero 1999). Chronic pain can be complex and difficult to manage. There needs to be a greater awareness among patients and healthcare professionals of the wide variety of treatment options in pain management. Some will not be suitable for all patients, some will fail but others will improve pain and function. Lower back pain affects 60-80 per cent of people at some stage in their lives (Nursing Standards 2004).

Recent statistics about acupuncture use estimate that in England each year, one million treatments are given in the NHS, and two million in the private sector (University of York 2001). Of the many non drug treatments available for pain, acupuncture receives the most positive reports in relation to effectiveness and long term management. I intend to critically appraise three pieces of research regarding acupuncture in the treatment of chronic lower back pain. Recently I attended a lecture about complimentary therapies in university which I found to be interesting and a good alternative to drugs as a medication.

I feel there is not enough complimentary therapies offered to patients with chronic pain. I would like to find out the effectiveness of acupuncture as a therapy for pain looking specifically at lower back pain. To discover the research question ' Is acupuncture effective in the treatment of chronic lower back pain? ' I looked on the SHU lit search which is linked to databases holding research documentation. I used the Cochrane library which has systematic reviews of evidence based healthcare literature including randomised controlled trials.

I used this database to find the most relevant information I needed. Searched words used included ' acupuncture' and ' chronic lower back pain'. The database found 6153 articles. To cut the amount of articles down I entered ' clinical trials' into the date base. It then found 63 articles. I then changed the dates to 1998-2010 because I wanted to find the most relevant and up to date research. The search brought up 40 articles. I looked through the articles and at the abstract information to finalise my choice of 3 research articles.

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The papers selected were Acupuncture in Patients with Chronic Low Back Pain (2006), Acupuncture treatment of chronic low-back pain (2001), a randomised placebo controlled prospective study and finally a Acupuncture for low back pain (1999). All three articles had a common aim which was to identify whether or not acupuncture was effective within the treatment of lower back pain. I will look at how the research was carried out in my chosen papers and appraise each paper with the aid of a universal critical appraisal tool that has been adapted from Hawker et al (2002). Critical appraisal is the process of carefully and systematically examining research to judge its trustworthiness, and its value and relevance in a particular context" (Burls 2009). One of the first stages of research design is to describe the aims and more detailed objectives of the study (Bowling 1997). The aim of the study and the question asked is defined as the most important part of research. Bury & Mead (1998) state that to have a clear and focused aim for the study there needs to be a clear aim to the research.

The research question has clearly been identified in the papers by Brinkhaus et al (2006) and Goerlitz et al (2001). However trying to identify the aim within Gould et al (1999) is hard to distinguish. Having read into the paper more thoroughly the aim of the study was found. The author could have strengthened this by posing a question, which was found in the abstract (Hicks, 1999). Brinkhaus et al (2006) and Goerlitz et al (2001) both used blinded placebo randomised controlled trials. Blinding ensures that the preconceived views of subjects and clinicians cannot systematically bias the assessment of outcomes.

Intention to treat analysis maintains the advantages of random allocation, which may be lost if subjects are excluded from analysis through, for example, withdrawal or failure to comply. The purpose of random allocation of participants is to assure that the characteristics of the participants are as likely to be similar as possible across groups at the start of the comparison. If randomisation is done properly, it reduces the risk of a serious imbalance in known and unknown factors that could influence the clinical course of the participants (Jadad 1998).

No other study design allows investigators to balance these factors. The history of clinical trials dates back to approximately 600 B. C. when Daniel of Judah conducted what is probably the earliest recorded clinical trial.

Randomised controlled trials are the most rigorous way of determining whether a cause effect relation exists between treatment and outcome and for assessing the cost effectiveness of a treatment. Many randomised controlled trials involve large sample sizes because many treatments have relatively small effects.

The size of the expected effect of the intervention is the main determinant of the sample size necessary to conduct a successful randomized controlled trial. Obtaining statistically significant differences between two samples is easy if large differences are expected. However, the smaller the expected effect of the intervention, the larger the sample size needed to be able to conclude, with enough power, that the differences are unlikely to be due to chance Gould et al (1999) trial was randomised however it was uncontrolled. This kind of clinical trial does not involve a control treatment.

Any study that does not have a control group consisting of patients treated and followed up over the same time period as those in a treated group.

When research involving human participants is carried out within an institution such as a hospital, formal ethical approval is normally required (Sim and Wright 2000). All participants gave informed consent. Informed consent may be defined as ' the voluntary and revocable agreement of a competent individual to participate in a therapeutic or research procedure based on the adequate understanding of its nature, purpose, and implications (Sim and Wright 2000).

Brinkhaus et al (2006) and Goerlitz et al (2001) state approval was gained by the local ethics review boards in all regions where the study was conducted. By coding responses the anonymity of the participants is protected however, there is no mention of what will happen to data at the end of the study (Bailey 1997) No medical ethics committees approval was sought for Gould et al (1999) trial because there was no experimental aspect to the study. The advantages of sampling over complete population coverage are financial and better quality data are obtained (Bowling 1997).

Most participants were recruited through articles in local newspapers and a few patients spontaneously contacted trial centres in Brinkhaus et al (2006) study. The inclusion criteria was clinical diagnosis of chronic low back pain with a disease duration of more than 6 months, aged 40 to 75 years, average pain intensity of 40 or more on a 100 mm visual analog scale on the previous 7 days, only use of oral non steroidal anti-inflammatory drugs for pain treatment in the 4 weeks before treatment.

Goerlitz et al (2001) had a consecutive sample of 150 out patients aged 18-65 years with non-radiating lower back pain for at least 6 months were included initially. Exclusion criteria were an abnormal neurological status, concomitant severe disease, psychiatric illness, current psychotherapy, pathological lumbosacral anterior-posterior and lateral X-rays, rheumatic inflammatory disease, planned hospitalisation, and refusal of participation.

Gould et al (1999) recruited patients who were all referred by local GPs according to pre agreed criteria. The criteria was eligible patients who were identified by their GP as having experienced low back pain for the previous month or longer and who do not satisfy the following reasons for exclusion: patients aged under 18 or over 65, pending litigation, major structural abnormalities, carcinoma, past operations on the back, pregnancy, bleeding disorders or ankylosing spondylitis. The sampling strategy appropriately addresses the research aims of all of the research papers. Each paper clearly defines how the research has been collected. Each paper gives background information about the chosen study.

Brinkhaus et al (2006) patients completed a modified version of a pain questionnaire published by the German Society for the Study of Pain at baseline and after 8, 26, and 52 weeks. Questionnaires are effective methods to use as they are cost effective; they can minimise time and can produce both qualitative and quantitative data. However disadvantages include that they can consist of leading questions steering the participant to a specific answer and generally they tend to be very brief and cannot be used on sensitive topics. Although researchers can obtain qualitative data from questionnaires if they are open ended questions.

Goerlitz et al (2001) collected information at baseline where all patients underwent an evaluation which included a full medical and a physical examination which included evaluation of the lumbar spine, and a neurological examination. At the end of treatment another physical assessment by a blinded physician was carried out. A variety of records and measures were used to describe the sample of patients and the changes they experienced with treatment with the study by Gould et al (1999). They also used a number of health questionnaires which I found to be the most thorough to gain suitable recordings.

Brinkhaus et al (2006) used a visual analog scale and software program SPSS 11. 5; SPSS Inc and Chicago, Ill. Data analyses were performed using the statistical program package SAS (SAS, 1996) for Goerlitz (2001) study.

Matched pairs t test compared outcome measures between baseline (T1) and at the end of treatment (T3), and between baseline (T1) and at follow up 6 months. All three papers give a detailed interpretation of their findings. The results are shown in tables and in the main text. The use of tables provides an easy to look at overview of the results.

Brinkhaus et al (2006) study shows that acupuncture was more effective than no acupuncture in patients with chronic low back pain. Most outcome variables tended to be slightly better in the acupuncture group compared with the minimal acupuncture group. However there is no effect of traditional acupuncture beyond a placebo and probably a small unspecific effect of needling in Goerlitz et al 2001. These two papers are showing different findings, this could be because of the amount of people they used, the age and sex of the people and how they developed their results.

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Changes in health status following treatment with acupuncture in Gould et al (1999) study showed significant improvements in the outcome measures at the end of the a course of 10 treatments. The results suggest that this improvement in outcome measures has been maintained at 6 months after completion of treatment. There are implications for transferability and generalisability within Brinkhaus et al (2006) study. They state that it is one of the largest and most rigorous trials to investigate the efficacy of acupuncture for low back pain.

The strengths of the study include central randomisation, assessment of the credibility of interventions, interventions based on expert consensus provided by qualified and experienced medical acupuncturists, and high follow-up rates. But as most study participants expressed high expectations of acupuncture treatment, the study population may not be entirely representative of all patients with chronic low back pain in clinical practice. Gould et al (1999) used a small sample size and men and women percentages were uneven.

To conclude, overall all papers found out what they set out to achieve. Future studies should take into account the sample size and how the patients are selected. Research has become an integral part of nursing and its importance is reflected particularly in the changes to nurse education made in recent years. Nurses need to have good objective skills, they need to be purposeful, reflective and questioning and with this in mind, evidence based nursing should always maintain a balance between research on a clinical subject and information that has been gained from the patient.

References

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