How Many Results are Enough? – Examples from Published Systematic Reviews

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<th>Systematic Review Article</th>
<th>Search Results</th>
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<td>Atenstaedt and Jones 2011</td>
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<td>Dennis, Hawken et al. 2011</td>
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OBJECTIVES: To undertake a systematic review of articles on the prevention of dog fouling. STUDY DESIGN: Systematic review. METHODS: Literature searches were conducted using six major electronic databases. Published and unpublished material was considered, with no restrictions on date or language. A total of 47 other databases and websites were interrogated. Articles were hand searched for references that had not been identified in the electronic search. Only controlled trials or observational studies assessing the impact of any intervention on the prevention of dog fouling were liable for inclusion in the systematic review. RESULTS: The search identified a total of 68 articles, none of which fulfilled the inclusion criteria. CONCLUSIONS: The review did not find any good-quality studies which have looked at interventions to prevent dog fouling. According to the Cochrane Collaboration, reviews that are unable to find any relevant studies are particularly useful because they highlight important gaps in our knowledge. It is recommended that research is commissioned to answer the important question of what interventions actually work to prevent dog fouling. Methods for performing this research are suggested.


BACKGROUND: Stickler syndrome, also known as hereditary progressive arthropthalmopathy, is an inherited progressive disorder of the collagen connective tissues. Manifestations include short-sightedness, cataracts, retinal problems leading to retinal
detachment and possible blindness. This is principally the case among individuals with type 1 Stickler Syndrome. It is the most commonly identified inherited cause of retinal detachment in childhood. However, there is no consensus regarding best practice and no current guidelines on prophylactic interventions for this population. OBJECTIVES: The aim of this systematic review was to assess the evidence for the clinical effectiveness and safety of primary prophylactic interventions for the prevention of retinal detachment in previously untreated eyes without retinal detachment in patients with Stickler syndrome.

The primary outcome of interest was retinal detachment post prophylaxis. DATA SOURCES: A systematic search was made of 11 databases of published and unpublished literature, which included MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations, EMBASE, the Cumulative Index to Nursing and Allied Health Literature and The Cochrane Library. There was no restriction by language or date. The references of all included studies were checked for further relevant citations and authors of studies with potentially relevant data were also contacted. REVIEW METHODS: Two reviewers double-screened all titles and abstracts of the citations retrieved by the search to identify studies that satisfied the inclusion criteria. Both reviewers also independently extracted and quality assessed all included studies. A narrative synthesis was performed.

RESULTS: The literature search identified 1444 unique citations, of which four studies satisfied the inclusion criteria. The two principal studies were both retrospective cohort studies with control groups in populations with type 1 Stickler syndrome. One study evaluated 360 degrees cryotherapy (n = 204) and the other focal or circumferential laser treatment (n = 22). Both studies reported a statistically significant difference in the rate of retinal detachment per eye between the groups receiving prophylaxis and the controls. However, both studies were subject to a high risk of bias. The results of the two supporting studies of Wagner-Stickler patients were either relatively inconsistent or unreliable. No study reported any major or long-term complications associated with the interventions. Despite the weaknesses of the evidence, the rate of retinal detachment in the intervention groups, especially the cryotherapy group, was lower than the rate either experienced in the study control groups or reported in other studies of untreated Stickler syndrome populations not exposed to prophylaxis. CONCLUSIONS: Only 360 degrees cryotherapy and focal and circumferential laser treatment have been evaluated for the type 1 Stickler syndrome population, and then only by a single retrospective, controlled, cohort study in each case. Both of these studies report a significant difference between intervention and control groups (principally no treatment) and no major or long-term side effects or complications. However, there is a high risk of bias within these two studies, so the relative effectiveness of either intervention is uncertain. FUTURE WORK: A service priority is to determine reliably the prevalence of Stickler syndrome, i.e. how many individuals have type 1 or type 2 Stickler syndrome, and their risk of retinal detachment and subsequent blindness. A non-randomised, prospective cohort comparison study, in which eligible participants are treated, followed-up and analysed in one of three study arms, for no treatment, laser therapy or cryotherapy, would potentially offer further certainty in terms of the relative efficacy of both prophylaxis versus no prophylaxis and cryotherapy versus laser therapy than is possible with the currently available data. Alternatively, continued follow-up and analysis of existing study data, and data collection from relevant sample populations, are required to assess the long-term risks of blindness, retinal detachment and prophylaxis. FUNDING: This study was funded by the National Institute for Health Research Health Technology Assessment programme.

BACKGROUND AND METHODS: Volume of surgery and specialization may affect patient outcome. Articles examining the effects of one or more of three variables (hospital volume of surgery, surgeon volume and specialization) on outcome (measured by length of hospital stay, mortality and complication rate) were analysed. Reviews, opinion articles and observational studies were excluded. The methodological quality of each study was assessed, a correlation between the variables analysed and the outcome accepted if it was significant. RESULTS: The search identified 55,391 articles published between 1957 and 2002; 1075 were relevant to the study, of which 163 (9,904,850 patients) fulfilled the entry criteria. These 163 examined 42 different surgical procedures, spanning 13 surgical specialities. None were randomized and 40 investigated more than one variable. Hospital volume was reported in 127 studies; high-volume hospitals had significantly better outcomes in 74.2 per cent of studies, but this effect was limited in prospective studies (40 per cent). Surgeon volume was reported in 58 studies; high-volume surgeons had significantly better outcomes in 74 per cent of studies. Specialization was reported in 22 studies; specialist surgeons had significantly better outcomes than general surgeons in 91 per cent of studies. The benefit of high surgeon volume and specialization varied in magnitude between specialities. CONCLUSION: High surgeon volume and specialization are associated with improved patient outcome, while high hospital volume is of limited benefit.


BACKGROUND: delirium is a common clinical problem and is associated with adverse health outcomes. Many medications have been associated with the development of delirium, but the strength of the associations is uncertain and it is unclear which medications should be avoided in people at risk of delirium. METHODS: we conducted a systematic review to identify prospective studies that investigated the association between medications and risk of delirium. A sensitivity analysis was performed to construct an evidence hierarchy for the risk of delirium with individual agents. RESULTS: a total of 18,767 studies were identified by the search strategy. Fourteen studies met the inclusion criteria. Delirium risk appears to be increased with opioids (odds ratio [OR] 2.5, 95% CI 1.2-5.2), benzodiazepines (3.0, 1.3-6.8), dihydropyridines (2.4, 1.0-5.8) and possibly antihistamines (1.8, 0.7-4.5). There appears to be no increased risk with neuroleptics (0.9, 0.6-1.3) or digoxin (0.5, 0.3-0.9). There is uncertainty regarding H(2) antagonists, tricyclic antidepressants, antiparkinson medications, steroids, non-steroidal anti-inflammatory drugs and antimuscarinics. CONCLUSION: for people at risk of delirium, avoid new prescriptions of benzodiazepines or consider reducing or stopping these medications where possible. Opioids should be prescribed with caution in people at risk of delirium, but this should be tempered by the observation that untreated severe pain can itself trigger delirium. Caution is also required when prescribing dihydropyridines and antihistamine H1 antagonists for people at risk of delirium and considered individual patient assessment is advocated.


BACKGROUND: The case-only study, proposed as a design specifically for assessing departure from multiplicative gene-environment and gene-gene interactions, is of considerable potential value but there are concerns about its validity. The objective of this study was to evaluate the extent and sources of bias in the case-only design by means of a systematic review and meta-regression analysis. METHODS: The MEDLINE, CINAHL,
EMBASE and PUBMED databases were searched through to 7 October 2009. Studies that assessed bias in the case-only design applied to the study of gene-environment and gene-gene interaction were identified. Qualitative comments on the sources and extent of bias were extracted. A meta-regression analysis of the ratio (IOR(CC)/IOR(CO)) of the case-control (IOR(CC)) and case-only (IOR(CO)) interaction odds ratios was conducted based on studies in which both methods were applied to the same data set. RESULTS: The search yielded 365 unique articles of which 38 met the inclusion criteria. Potential sources of bias in the case-only design included non-independence of genotype and exposure in the source population. Meta-regression analysis, based on 24 evaluations, produced a mean IOR(CC)/IOR(CO) of 1.06 [95% confidence interval (95% CI) 0.93-1.22], suggesting that bias in case-only designs is not common in practice. The I(2) statistic indicated that 23.9% (95% uncertainty interval 0-53.9%) of the observed variation was due to heterogeneity between studies, which was not explained by any methodological characteristics of the included studies. CONCLUSION: As understanding of the relationships between genes and environmental exposures in the population improves, the case-only design may prove to be of considerable value.


OBJECTIVE: The terms used to refer to people who receive mental healthcare have been described as either potentially stigmatizing or empowering. This paper systematically reviews empirical studies of terminological usage in order to ascertain current knowledge. METHODS: Multiple databases were searched using the terms 'patient', 'client', 'service user' and 'consumer'. Empirical, English language studies were included where an aim was to measure outcome related to the various terms used to describe or refer to people who use mental health services. Studies were assessed (i) against a hierarchy of evidence and (ii) using a 12-item checklist of methodological quality. RESULTS: The search resulted in the screening of 13,765 abstracts; full text versions of 69 papers were examined and 11 studies that met the inclusion criteria were identified. All were cross-sectional surveys and all measured participant preference. Nine studies satisfied four or fewer quality markers. 'Client' and 'patient' were the terms preferred by study participants. CONCLUSIONS: Despite a stream of debate in editorial columns and letters pages, it is unclear whether terminological use is important to the people who use mental health services. Preference is the sole outcome investigated empirically. Generalization and interpretation from included studies should be approached very cautiously.


OBJECTIVE: To systematically review the evidence of the association of anticardiolipin antibodies with preeclampsia. DATA SOURCES: PubMed and LILACS were perused up to June 2009, citations were searched using the ISI Web of Knowledge database, textbooks and reference lists were reviewed, and experts were contacted. Search terms included "antiphospholipid syndrome," "Hughes' syndrome," "anticardiolipin antibodies," "antiphospholipid antibodies," "anti-cardiolipin," "preeclampsia," and "pre-eclampsia." METHODS OF STUDY SELECTION: Inclusion criteria were: cohorts, case-control, or controlled cross-sectional studies; healthy pregnancy as controls; no autoimmune diseases; immunoglobulin (Ig)G, IgM anticardiolipin antibody of at least 20 units by enzyme-linked immunosorbent assay, or both; and end-point preeclampsia. TABULATION, INTEGRATION, AND RESULTS: Our search generated 68,528
entries and 64 full-text articles were reviewed. Twelve studies were included in the meta-analysis. Pooled odds ratio (OR) for association of anticardiolipin antibodies with preeclampsia was 2.86 (95% confidence interval [CI], 1.37-5.98). Pooled OR for anticardiolipin antibodies and severe preeclampsia was 11.15 (95% CI 2.66-46.75). Funnel plot showed minor asymmetry, and the Egger test was not significant (P=.359). Meta-regression identified study design and size as related to heterogeneity.

CONCLUSION: Moderate-to-high levels of anticardiolipin antibodies are associated with preeclampsia, but there is insufficient evidence to use anticardiolipin antibodies as predictors of preeclampsia in clinical practice.


OBJECTIVE: To systematically review and assess the quality of studies evaluating community pharmacist interventions for preventing or managing diabetes or cardiovascular disease (CVD) and/or their major risk factors. DATA SOURCES: A comprehensive literature search was performed using MEDLINE (1950-February 2011), EMBASE (1980-February 2011), International Pharmaceutical Abstracts (1970-February 2011), Cumulative Index to Nursing and Allied Health Literature (1982-June 2007), and Cochrane Central Register of Controlled Trials (1898-February 2011). Search terms included: community pharmacy(ies), community pharmacist(s), cardiovascular, diabetes, and intervention. The grey literature was searched using the ProQuest Dissertations and Theses, Theses Canada, and OAlster databases. STUDY SELECTION AND DATA EXTRACTION: Articles published in English or French with all study designs were considered for the review. Studies were included if they contained interventions designed to reduce the incidence, risk, or mortality of CVD or diabetes; affect clinical indicators of CVD or diabetes mellitus (including hypertension, dyslipidemia, or hemoglobin A1c); and/or improve adherence to treatment strategies. Only studies involving interventions carried out primarily by pharmacists in community pharmacy settings were included. Study quality was assessed using a checklist validated for both randomized and nonrandomized studies. DATA SYNTHESIS: A total of 4142 studies were initially identified, with 40 meeting our inclusion criteria. Eleven studies were randomized controlled trials, 4 were cluster randomized trials, and 2 studies had randomized before-after designs. The remaining studies were controlled before-after (n = 2), cohort (n = 4), and uncontrolled before-after (n = 17) designs. Interventions focused on diabetes (n = 12), hypertension (n = 9), medication adherence (n = 9), lipids (n = 5), evidence-based medication initiation or optimization (n = 3), risk factor prediction scores (n = 1), and body mass index (n = 1). All studies contained interventions focused at the patient level and the majority of studies (34/40) involved interventions directed at both the physician and patient. No specific intervention emerged as superior, and study quality was generally poor, making it difficult to determine the true effect of the interventions.

CONCLUSIONS: Poor study quality, time-intensive interventions, and unproven clinical significance warrant the need for further high-quality studies of community pharmacist interventions for preventing or managing diabetes or CVD and/or their major risk factors.


OBJECTIVES: Evidence from randomized controlled trials (RCTs) for the use of 5-aminosalicylic acid (5-ASA) drugs in Crohn's disease (CD) in remission after a surgical resection is conflicting. We conducted a systematic review and meta-analysis of RCTs to examine this issue. METHODS: MEDLINE, EMBASE, and the Cochrane central register
of controlled trials were searched (through April 2010). Eligible trials recruited adults with luminal CD in remission after a surgical resection and compared 5-ASAs with placebo, or no treatment. Dichotomous data were pooled to obtain relative risk (RR) of relapse of disease activity, with a 95% confidence interval (CI). The number needed to treat (NNT) was calculated from the reciprocal of the risk difference. RESULTS: The search strategy identified 3,061 citations. Eleven RCTs were eligible for inclusion containing 1,282 patients. The RR of relapse of CD in remission after surgery with 5-ASA vs. placebo or no therapy was 0.86 (95% CI=0.74-0.99) (NNT=13). Sulfasalazine was of no benefit in preventing relapse in 448 patients (RR=0.97; 95% CI=0.72-1.31), but mesalamine was more effective than placebo or no therapy (RR=0.80; 95% CI=0.70-0.92) in 834 patients, with an NNT of 10. CONCLUSIONS: Mesalamine is of modest benefit in preventing relapse of CD in remission after surgery. Its use should be considered in those in whom immunosuppressive therapy is either not warranted or contraindicated.


Understanding factors that influence persistence of influenza virus in an environment without host animals is critical to appropriate decision-making for issues such as quarantine downtimes, setback distances, and eradication programs in livestock production systems. This systematic review identifies literature describing persistence of influenza virus in environmental samples, i.e., air, water, soil, feces, and fomites. An electronic search of PubMed, CAB, AGRICOLA, Biosis, and Compendex was performed, and citation relevance was determined according to the aim of the review. Quality assessment of relevant studies was performed using criteria from experts in virology, disease ecology, and environmental science. A total of 9,760 abstracts were evaluated, and 40 appeared to report the persistence of influenza virus in environmental samples. Evaluation of full texts revealed that 19 of the 40 studies were suitable for review, as they described virus concentration measured at multiple sampling times, with viruses detectable at least twice. Seven studies reported persistence in air (six published before 1970), seven in water (five published after 1990), two in feces, and three on surfaces. All three fomite and five air studies addressed human influenza virus, and all water and feces studies pertained to avian influenza virus. Outcome measurements were transformed to half-lives, and resultant multivariate mixed linear regression models identified influenza virus surviving longer in water than in air. Temperature was a significant predictor of persistence over all matrices. Salinity and pH were significant predictors of persistence in water conditions. An assessment of the methodological quality review of the included studies revealed significant gaps in reporting critical aspects of study design.


BACKGROUND: Computed Tomography (CT) is a frequently used staging modality for colon cancer patients in clinical practice. Our aim was to systematically review the available literature on diagnostic accuracy of CT for TNM staging of colon cancer. METHODS: A systematic review of literature was performed. PubMed was searched using MeSH terms with the following search terms: "Tomography, X-Ray Computed" or "Tomography, Spiral Computed" and Colonic Neoplasms. Studies on rectal cancer and studies without separate analyses for the colon were excluded. We identified 779
publications, of which 11 were included for review. Overall and sample-size-weight sensitivity, specificity, accuracy, true-positive, true-negative, false-positive, false-negative, positive and negative predictive values were calculated for T, N and M stages. RESULTS: In the 11 studies, a total of 753 patients with 759 colon cancers underwent CT for staging. Sample-size-weighted sensitivity, specificity and accuracy for T-staging was 77%, 3% and 67%, respectively; for N-staging 76%, 55% and 69%, respectively; and for M-staging 85%, 98% and 95%, respectively. Additional clinical findings were reported in 59/372 (16%) patients, with 12 having a malignant and 47 a benign origin. CONCLUSIONS: While accuracy of CT for TN-staging of colon cancer is only reasonable, the real value of CT is its high accuracy to detect distant metastases.


BACKGROUND: Electronic health record (EHR) implementation is currently underway in Canada, as in many other countries. These ambitious projects involve many stakeholders with unique perceptions of the implementation process. EHR users have an important role to play as they must integrate the EHR system into their work environments and use it in their everyday activities. Users hold valuable, first-hand knowledge of what can limit or contribute to the success of EHR implementation projects. A comprehensive synthesis of EHR users' perceptions is key to successful future implementation. This systematic literature review was aimed to synthesize current knowledge of the barriers and facilitators influencing shared EHR implementation among its various users. METHODS: Covering a period from 1999 to 2009, a literature search was conducted on nine electronic databases. Studies were included if they reported on users' perceived barriers and facilitators to shared EHR implementation, in healthcare settings comparable to Canada. Studies in all languages with an empirical study design were included. Quality and relevance of the studies were assessed. Four EHR user groups were targeted: physicians, other health care professionals, managers, and patients/public. Content analysis was performed independently by two authors using a validated extraction grid with pre-established categorization of barriers and facilitators for each group of EHR users. RESULTS: Of a total of 5,695 potentially relevant publications identified, 117 full text publications were obtained after screening titles and abstracts. After review of the full articles, 60 publications, corresponding to 52 studies, met the inclusion criteria. The most frequent adoption factors common to all user groups were design and technical concerns, ease of use, interoperability, privacy and security, costs, productivity, familiarity and ability with EHR, motivation to use EHR, patient and health professional interaction, and lack of time and workload. Each user group also identified factors specific to their professional and individual priorities. CONCLUSIONS: This systematic review presents innovative research on the barriers and facilitators to EHR implementation. While important similarities between user groups are highlighted, differences between them demonstrate that each user group also has a unique perspective of the implementation process that should be taken into account.


BACKGROUND: Neurological soft signs are subtle but observable impairments in motor and sensory functions that are not localized to a specific area of the brain. Neurological soft signs are common in schizophrenia. It has been established that soft signs meet two of five criteria for an endophenotype, namely: association with the illness, and state independence. This review investigated whether soft signs met a further criterion for an
endophenotype, namely familial association. It was hypothesized that if familial association were present then neurological soft signs would be: (a) more common in first-degree relatives of people with schizophrenia than in controls; and (b) more common in people with schizophrenia than in their first-degree relatives. METHOD: A systematic search identified potentially eligible studies in the EMBASE (1980-2011), OVID-MEDLINE (1950-2011) and PsycINFO (1806-2011) databases. Studies were included if they carried out a three-way comparison of levels of soft signs between people with schizophrenia, their first-degree relatives, and normal controls. Data were extracted independently by two reviewers and cross-checked by double entry. RESULTS: After screening 8678 abstracts, seven studies with 1553 participants were identified. Neurological soft signs were significantly more common in first-degree relatives of people with schizophrenia than in controls (pooled standardised mean difference (SMD) 1.24, 95% confidence interval (c.i) 0.59-1.89). Neurological soft signs were also significantly more common in people with schizophrenia than in their first-degree relatives (SMD 0.92, 95% c.i 0.64-1.20). Sensitivity analyses examining the effects of age and group blinding did not significantly alter the main findings. CONCLUSIONS: Both hypotheses were confirmed, suggesting that the distribution of neurological soft signs in people with schizophrenia and their first-degree relatives is consistent with the endophenotype criterion of familial association.