

## How to Write an Abstract

### **Justification:**

*What is the justification for your research? Include one or two sentences identifying the gaps in the literature that your study fills and/or how (why) your study will add to the knowledge base in your field.*

### **Purpose:**

*What is the purpose (aim or objective) of your study? Include here any research questions or hypotheses.*

### **Method:**

*Identify your participants. Identify your data sources. Identify your procedure and include your measures. Identify your analysis plan.*

### **Result:**

*What does your data analysis show? In one or two sentences, identify results.*

### **Conclusion:**

*What are the conclusions that you can draw from your results? What are the implications?*

## Example of Nursing Research: 580 words

Shojania, K. G., Duncan, B. W., McDonald, K. M., Wachter, R. M., & Markowitz, A. J. (2001). Making health care safer: a critical analysis of patient safety practices. *Evid Rep Technol Assess (Summ)*, 43(1), 668.

### Structured Abstract

#### Objective:

The objective of the report was to review the evidence on the impact of [health information technology \(IT\)](#) on all phases of the [medication management](#) process (prescribing and ordering, order communication, dispensing, administration and monitoring as well as education and reconciliation), to identify the gaps in the literature and to make recommendations for future research.

#### Data sources:

We searched peer-reviewed electronic databases, grey literature, and performed hand-searches. Databases searched included [MEDLINE](#),<sup>®</sup> [EMBASE](#),<sup>®</sup> [CINAHL](#)<sup>®</sup> (Cumulated Index to Nursing and Allied Health Literature), Cochrane Database of Systematic Reviews, International Pharmaceutical Abstracts,<sup>®</sup> Compendex,<sup>®</sup> INSPEC<sup>®</sup> (which includes [IEEE](#)<sup>®</sup>), Library and Information Science Abstracts,<sup>®</sup> E-Prints in Library and Information Science,<sup>®</sup> PsycINFO,<sup>®</sup> Sociological Abstracts,<sup>®</sup> and Business Source<sup>®</sup> Complete. Grey literature searching involved Internet searching, reviewing relevant Web sites, and searching electronic databases of grey literatures. [AHRQ](#) also provided all references in their [e-Prescribing](#), bar coding, and [CPOE](#) knowledge libraries.

#### Methods:

Paired reviewers looked at citations to identify studies on a range of health [IT](#) used to assist in the [medication management](#) process ([MMIT](#)) during multiple levels of screening (titles and abstracts, full text and final review for assignment of questions and data abstraction). Randomized controlled trials and cohort, case-control, and case series studies were independently assessed for quality. All data were abstracted by one reviewer and examined by one of two different reviewers with content and methods expertise.

#### Results:

40,582 articles were retrieved. After duplicates were removed, 32,785 articles were screened at the title and abstract phase. 4,578 full text articles were assessed and 789 articles were included in the final report. Of these, 361 met only content criteria and were listed without further abstraction. The final report included data from 428 articles across the seven key questions. Study quality varied according to phase of [medication management](#). Substantially more studies, and studies with stronger comparative methods, evaluated prescribing and monitoring. Clinical decision support systems ([CDSS](#)) and [computerized provider order entry \(CPOE\)](#) systems were studied more than any other application of [MMIT](#). Physicians were more often the subject of evaluation than other participants. Other health care professionals, patients, and families are important but not studied as thoroughly as physicians. These nonphysicians groups often value

different aspects of MMIT, have diverse needs, and [use](#) systems differently. Hospitals and ambulatory clinics were well-represented in the literature with less emphasis placed on long-term care facilities, communities, homes, and nonhospital pharmacies. Most studies evaluated changes in process and outcomes of use, [usability](#), and knowledge, skills, and attitudes. Most showed moderate to substantial improvement with implementation of MMIT. Economics studies and those with [clinical outcomes](#) were less frequently studied. Those articles that did address economics and clinical outcomes often showed equivocal findings on the effectiveness and cost-effectiveness of MMIT systems. Qualitative studies provided evidence of strong perceptions, both positive and negative, of the effects of MMIT and unintended consequences. We found little data on the effects of forms of medications, conformity, standards, and open source status. Much descriptive literature discusses implementation issues but little strong evidence exists. Interest is strong in MMIT and more groups and institutions will implement systems in the next decades, especially with the Federal Government's push toward more health [IT](#) to support better and more cost-effective health care.

### **Conclusions:**

[MMIT](#) is well-studied, although on closer examination of the literature the evidence is not uniform across phases of [medication management](#), groups of people involved, or types of MMIT. MMIT holds the promise of improved processes; clinical and economics studies and the understanding of [sustainability](#) issues are lacking.

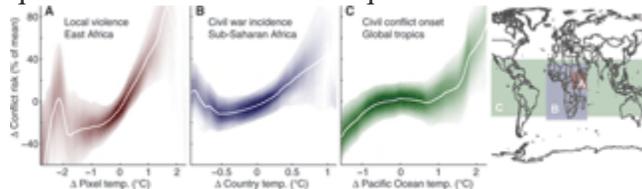
## Example of Political Science Research: 465 words

Hsiang, S. M., Burke, M., & Miguel, E. (2013). Quantifying the influence of climate on human conflict. *Science*, 341(6151), 1235367.

### Structured Abstract

#### Introduction

Despite the existence of institutions designed to promote peace, interactions between individuals and groups sometimes lead to conflict. Understanding the causes of such conflict is a major project in the social sciences, and researchers in anthropology, economics, geography, history, political science, psychology, and sociology have long debated the extent to which climatic changes are responsible. Recent advances and interest have prompted an explosion of quantitative studies on this question.



#### Climate and conflict across spatial scales.

Evidence that temperature influences the risk of modern human conflict: (A) local violence in  $1^\circ$  grid cells, (B) civil war in countries, and (C) civil conflict risk in the tropics. The map depicts regions of analysis corresponding to nonparametric watercolor regressions in (A) to (C). The color intensity in (A) to (C) indicates the level of certainty in the regression line.

#### Methods

We carried out a comprehensive synthesis of the rapidly growing literature on climate and human conflict. We examined many types of human conflict, ranging from interpersonal violence and crime to intergroup violence and political instability and further to institutional breakdown and the collapse of civilizations. We focused on quantitative studies that can reliably infer causal associations between climate variables and conflict outcomes. The studies we examined are experiments or “natural experiments”; the latter exploit variations in climate over time that are plausibly independent of other variables that also affect conflict. In many cases, we obtained original data from studies that did not meet this criterion and used a common statistical method to reanalyze these data. In total, we evaluated 60 primary studies that have examined 45 different conflict data sets. We collected findings across time periods spanning 10,000 BCE to the present and across all major world regions.

#### Results

Deviations from normal precipitation and mild temperatures systematically increase the risk of conflict, often substantially. This relationship is apparent across spatial scales ranging from a single building to the globe and at temporal scales ranging from an anomalous hour to an anomalous millennium. Our meta-analysis of studies that examine populations in the post-1950

era suggests that the magnitude of climate's influence on modern conflict is both substantial and highly statistically significant ( $P < 0.001$ ). Each 1-SD change in climate toward warmer temperatures or more extreme rainfall increases the frequency of interpersonal violence by 4% and intergroup conflict by 14% (median estimates).

## Discussion

We conclude that there is more agreement across studies regarding the influence of climate on human conflict than has been recognized previously. Given the large potential changes in precipitation and temperature regimes projected for the coming decades—with locations throughout the inhabited world expected to warm by 2 to 4 SDs by 2050—amplified rates of human conflict could represent a large and critical social impact of anthropogenic climate change in both low- and high-income countries.

## **Example of a meta-analysis**

**494 words**

Wang, Y., Wu, Y., Wilson, R. F., Bleich, S., Cheskin, L., Weston, C., ... & Segal, J. (2013). Childhood obesity prevention programs: comparative effectiveness review and meta-analysis.

### **Structured Abstract**

#### **Objectives:**

Childhood obesity is a serious health problem in the United States and worldwide. More than 30 percent of American children and adolescents are overweight or obese. We assessed the effectiveness of childhood obesity prevention programs by reviewing all interventional studies that aimed to improve diet, physical activity, or both and that were conducted in schools, homes, primary care clinics, childcare settings, the community, or combinations of these settings in high-income countries. We also reviewed consumer health informatics interventions. We compared the effects of the interventions on weight-related outcomes (e.g., body mass index [BMI], waist circumference, percent body fat, skinfold thickness, prevalence of obesity and overweight); intermediate outcomes (e.g., diet, physical activity); and obesity-related clinical outcomes (e.g., blood pressure, blood lipids).

#### **Data sources:**

We searched MEDLINE<sup>®</sup>, Embase<sup>®</sup>, PsycInfo<sup>®</sup>, CINAHL<sup>®</sup>, clinicaltrials.gov, and the Cochrane Library through August 11, 2012.

#### **Methods:**

Two reviewers independently reviewed each article for eligibility. For each study, one reviewer extracted the data and a second reviewer verified the accuracy. Both reviewers assessed the risk of bias for each study. Together, the reviewers graded the strength of the evidence (SOE) supporting interventions—diet, physical activity, or both—in each setting for the outcomes of interest. We quantitatively pooled the results of studies that were sufficiently similar. Only experimental studies with followup of at least 1 year (6 months for studies in school settings) were included. We abstracted data on comparisons of intervention versus control.

#### **Results:**

We identified 34,545 unique citations and included 131 articles describing 124 interventional studies. The majority of the interventions (104 studies) were school based, although many of them included components delivered in other settings. Most were conducted in the United States and in the past decade. Results of four studies were pooled for BMI and four for BMI z-score in the school-only setting; results of five school-home studies were pooled for BMI. Other studies tested interventions delivered at home (n=6), in primary care (n=1), in childcare (n=4), and in the community (n=9). Six studies tested consumer health informatics interventions. For obesity prevention, the following settings and interventions showed benefit: school-based—diet or physical activity interventions (SOE moderate); school-based with a home component—physical activity interventions (SOE high) and both diet and physical activity (SOE moderate); school-based with home and community components—diet and physical activity interventions (SOE high); school-based with a community component—diet and physical activity interventions

(SOE moderate); community with a school component—diet and physical activity interventions (SOE moderate). The strength of the evidence is either low or insufficient for the remainder of the interventions and settings.

**Conclusions:**

The evidence is moderate about the effectiveness of school-based interventions for childhood obesity prevention. Physical activity interventions in a school-based setting with a family component or diet and physical activity interventions in a school-based setting with home and community components have the most evidence for effectiveness. More research is needed to test interventions in other settings, such as those testing policy, environmental, and consumer health informatics strategies.