



# Preferred Reporting Items for Systematic Reviews and Meta-Analyses

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The number of systematic reviews in the literature has increased substantially to include “umbrella reviews” (Conn & Coon Sells, 2014) and systematic reviews of systematic reviews (Adam, Bond, & Murchie, 2015; Corry, While, Neenan, & Smith, 2015). The overall goal of a systematic review is to synthesize and appraise all relevant high-quality research in an effort to answer a specific research or clinical question. The key steps in a systematic review include “the selection of predefined objectives and eligibility criteria for studies, a reproducible methodology, a systematic search targeting all studies that meet the eligibility criteria, an evaluation of the validity of the study findings, and a synthesis and presentation of the findings of the included studies” (Cope, 2014, p. 208). These steps, particularly the reproducible methodology, demonstrate the importance of rigor and consistency to achieve reliable, valid research findings. Consistency is not only critical for the research process, but also is critical in research reporting. Several guidelines exist to promote consistency in research reporting. This article will present the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines and discuss implications and use in oncology nursing research.

As a result of an increase in published clinical trials, systematic reviews, and meta-analyses, research reporting guidelines were developed to promote uniformity. These include the Consolidated Standards of Reporting Trials (CONSORT), the Standards for Quality Improvement Reporting Excellence, and PRISMA, which specifically is devoted to systematic reviews and meta-analyses. The PRISMA guidelines first were published in 1996 as part of the Quality of Reporting of Meta-Analyses statement, and, in a 2009 update, systematic reviews were added

to meta-analyses and PRISMA became its own statement (Foster, 2012; Moher, Liberati, Tetzlaff, & Altman, 2009). The original intent of PRISMA was to improve on any inadequate or inaccurate reporting of systematic reviews and meta-analyses in the literature (Foster, 2012; Milner, 2015). PRISMA “encourages authors to describe steps taken to minimize bias and maximize accuracy in locating and selecting reports for inclusion, abstracting data from reports, and analyzing overall intervention effect” (Kearney, 2014, p. 86).

The 27-item PRISMA checklist is available at [www.prisma-statement.org/statement.htm](http://www.prisma-statement.org/statement.htm) and covers what should be included in the title, abstract, introduction, methods, results, discussion, and funding sections of systematic reviews and meta-analyses. For example, “Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.” Just as authors find CONSORT helpful as a guide, the detailed PRISMA checklist is helpful in making sure all elements of the review have been included, allowing readers to judge its strengths and limitations. The risk of bias is emphasized to an even greater extent in PRISMA than in CONSORT.

## Application in Oncology Nursing Research

The oncology nursing literature also has experienced a dramatic increase in published systematic reviews and meta-analyses. The two journals published by the Oncology Nursing Society (ONS), the *Clinical Journal of Oncology Nursing* (CJON) and the *Oncology Nursing Forum* (ONF), demonstrate clear

evidence of this increase in systematic reviews and meta-analyses. To identify the number of systematic reviews in these two ONS journals alone, a PubMed search was performed on May 6, 2015, of “(clinical journal of oncology nursing[ta] OR oncology nursing forum[ta]) AND systematic[sb]”—“systematic[sb]” activates the “Article type” filter and limits to those articles assigned a “systematic reviews” subject—and it retrieved 294 articles, 28 of which explicitly included “systematic review” or “meta-analysis” in the title. Two articles included both terms in the title (Lee & Oh, 2013; Mishra, Scherer, Snyder, Geigle, & Gotay, 2014). Of the 294 retrieved articles, 200 were published in 2006 or later, further illustrating the trend of their proliferation. A CINAHL Complete search of “(SO clinical journal of oncology nursing OR SO oncology nursing forum) and PT systematic review” performed on the same date returned 195 citations, 171 of which were published in 2006 or later.

Several examples of the PRISMA guidelines are exemplified in *CJON* and *ONF*. The PRISMA flow diagram, which illustrates the different phases of information in a systematic review and shows the number of records identified, screened, and excluded, has been published in *CJON* and *ONF*, as shown in Figure 1. The diagram has been used in conjunction with the ONS Putting Evidence Into Practice (PEP) resources ([www.ons.org/practice-resources/pep](http://www.ons.org/practice-resources/pep)), which identify the best available scientific evidence to help nurses improve nursing-sensitive patient outcomes, synthesizing published literature into a classification scheme based on the effectiveness of

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