

# Epistemonikos and KSR Evidence: usability for SBU Evidence maps

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### Abstract

*This article presents an evaluation of the two databases Epistemonikos and KSR Evidence, in the context of conducting evidence maps at the Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU). Thirty-six systematic reviews included in published SBU Evidence Maps were used as a gold standard records (GSR). Title searches, as well as subject searches, were performed. Title searches showed that Epistemonikos covers 97% of the GSR, and KSR Evidence covers 94%. Structured subject searches retrieved a part of the references, 58% from KSR Evidence and 48% from Epistemonikos. Epistemonikos and KSR Evidence are valuable resources for identifying systematic reviews, but not sufficient to replace any of the databases usually used for SBU Evidence Maps.*

**Key words:** *databases, bibliographic; information storage and retrieval; review literature as topic; evidence-based medicine.*

### Introduction

The Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU) produces evidence maps of systematic reviews on topics relevant to health care and social services. SBU evidence maps aim at identifying reliable evidence as well as gaps in the scientific knowledge. The literature is identified by structured and exhaustive searches in various bibliographic databases. Literature searching for SBU Evidence maps follow the same method as literature searching for SBU's HTA-reports. A description of the method can be found in SBU's handbook (1).

Over the last years new databases that register systematic reviews have been introduced, for example Epistemonikos and KSR Evidence. Epistemonikos is produced by the Epistemonikos foundation in Chile and the database can be used free of charge. Besides systematic reviews, the database also contains original articles and often links to the original articles included in the systematic reviews. KSR Evidence is a licensed database produced by Kleijnen Systematic Reviews Ltd in Great Britain. It contains systematic reviews, many of them assessed for risk of bias by

using the appraisal tool ROBIS (2).

The information specialists at SBU normally search 5-15 different databases when conducting a SBU Evidence Map. Not all databases have indexing terms for the study design systematic review and this can lead to a large number of records that will need to be screened.

If Epistemonikos and KSR Evidence cover the scientific literature within SBU's fields of interest and offer the possibility to do structured and exhaustive searches, they might replace other more comprehensive databases, potentially making searching and screening more effective, without the risk of missing relevant literature. This is particularly important since many of our projects have short timeframes.

We wanted to investigate whether searching these two databases could be useful for SBU Evidence Maps. To answer this, we asked whether the systematic reviews included in the last six SBU Evidence Maps:

- were registered in Epistemonikos and KSR Evidence;
- could be identified with structured subject searches.

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**Methods**

Thirty-six systematic reviews included in the six latest published SBU Evidence Maps were used as gold standard records (GSR) for this evaluation. We hypothesized that a database contained material relevant for SBU if the GSR could be identified in its collection.

The reviews cover a wide range of topics in both health care and social service interventions from a broad perspective, reflecting wide range of subjects that are relevant for SBU.

We also tested whether structured subject searches could be used to identify the GSR.

The evidence maps were published 2016-2019 and covered the following topics:

- substance abuse disorders (3);
- social assistance (4);
- collaborative care for persons with mental illness (5);
- assistive technology for elderly (6);
- methods used in forensic psychiatry (7);
- drug treatment for children with respiratory tract infections (8).

**Methods for evaluating database coverage**

For each of the 36 GSR, a title search was performed in both databases. The aim was to see if the GSR were registered in each respective database. The searches were performed during spring 2019.

**Methods for evaluating search functionality**

A structured subject search per evidence map/research question was performed in both databases. All searches were based on the original search strategy but adapted to the search options available for each of the databases. The databases could not process some of the more comprehensive and complex search strategies, so the strategies needed to be simplified (see Supplementary Material available online). All hits were exported into EndNote, one library per database, and grouped by the evidence map in question. Finally, title searches for all systematic reviews were performed in EndNote. This showed if each systematic review was found by the performed structured subject search in one of the databases or in both.

**Results**

**Results of database coverage**

Of the 36 systematic reviews in our GSR, 34 were registered in KSR Evidence (9-41) and 35 GSR (9-42) were

registered in Epistemonikos. Thus, Epistemonikos covers 97% of the GSR while KSR Evidence covers 94%. Neither Epistemonikos nor KSR Evidence covered one of the reviews (43). One other article (42) was not found in the KSR Evidence database. Both articles (42, 43) are in the field of social assistance.

**Results of structured searches**

Our structured subject search retrieved slightly more of the 36 GSR from KSR Evidence than from Epistemonikos. A subject search in KSR Evidence retrieved 21 (58%) of the GSR (9, 10, 13, 15, 17-19, 21, 23-25) (27, 28, 30, 32, 33, 35-38, 41). The structured search of Epistemonikos retrieved 16 (44%) of the GSR (9, 10, 13, 15, 18, 19, 21, 23-25, 27, 32, 35-38). All 16 of the reviews found with structured subject searches in Epistemonikos were also found by searches in KRS Evidence: 7 references answering the question about substance abuse disorder, 5 about collaborative care, 3 references about assistive technology for elderly and 1 about forensic psychiatry.

The results of the structured subject searches are presented in detail in *Table 1*.

Evidence map	Included references	Number gold standard record	Number of gold standard record found by structured searches in KSR Evidence	Number of gold standard record found by structured searches in Epistemonikos	Total number of gold standard record found by structured searches in both databases
Substance abuse disorder	(9), (10), (13), (17), (22), (26), (29), (36), (38)	9	8	7	8
Social assistance	(14), (44)	2	0	0	0
Collaborative care for persons with mental illness	(25), (28), (32), (33), (37), (39), (40)	7	5	5	5
Assistive technology for elderly	(12), (16), (19), (20)	4	3	3	3
Methods used in forensic psychiatry	(24), (34)	2	2	1	2
Drug treatment for children with respiratory tract infections	(11), (15), (18), (21), (23), (27), (30), (31), (35), (41), (42), (43)	12	3	0	3
<b>Total number of references</b>		<b>36</b>	<b>21</b>	<b>16</b>	<b>21</b>

**Table 1.** Number of gold standard (GSR) identified by structures subject searches in KSR Evidence and Epistemonikos.

**Conclusions and discussion**

Although Epistemonikos and KSR Evidence mainly cover topics in health care, we found that almost all of

the GSR, even those more relevant to social services, were registered in both databases as identified by title searches.

Structured subject searches, however, only retrieved a fraction of the relevant reviews, 58% from KSR Evidence and 48% from Epistemonikos. The simplified search strategies and the heterogeneous vocabulary of the social services area might be part of the explanation. More unexpectedly, only a small number of the systematic reviews on respiratory tract infections- a medical topic- were identified. This implies that either the search strings were not comprehensive enough, or that the databases are not suited for exhaustive searches. It is worth noting that our structured searches identified a higher number of references from our gold standard in KSR Evidence compared to Epistemonikos. A deeper analysis is needed to determine if this difference is due to the capacity of the search engines, stability of the databases or if the search strategy needs further refinement.

We find Epistemonikos and KSR Evidence to be valuable resources for identifying systematic reviews. Both databases have unique features that could be valuable for SBU Evidence Maps and deserves further evaluation.

However, neither database has sufficient coverage and retrieval features to allow it to replace any of the databases usually used for SBUs Evidence Maps.

### **Limitations**

There are a number of limitations to our investigation that need to be taken into account when considering our results.

The searches were in some cases performed by an information specialist other than the one that worked out the original search strategies. This could have had an impact on the quality of the search strategies that were adapted for the two new databases.

The search strategies for Epistemonikos and KSR Evidence were designed to be as similar to each other as possible, but in some cases the strategies needed to be adjusted to accommodate the different options and limitations specific for each of the databases. Thus, a complete comparison between the search options for each database is not possible.

The searches in KSR Evidence were carried out during a trial period of five working days. A longer trial period would have allowed for more testing and may have al-

lowed us to more thoroughly explore whether the KSR search interface can handle more elaborate search strategies than the ones we had time to develop.

Our investigation is based on a relatively small number of evidence maps, some of which only contributed a small number of reviews to our set of GSR. Increasing the number of evidence maps so that our set of gold standard records was larger could affect the results and make them more generalizable.

A deeper analysis of why some of the references were not identified by the structured subject searches was not done within this project. Neither did we assess the number needed to read (NNR) which could have provided a more in-depth understanding of how useful the two databases might be to the process of creating a SBU Evidence Map.

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