



An introduction to NMAstudio2.0 and its embedded knowledge translation tool for network meta-analysis



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Introduction

Problems of performing NMAs:

- Complex methodology
- Statistical & coding expertise required
- Hard to effectively share results



Objectives of NMAstudio :

- Simplify the whole procedure of performing NMAs
- Enhances the visualization of results
- Facilitate the communication of results

Problems of presenting results from NMAs:

- Significantly high volume of information
- NMAs with important information not reported
- No standard format



Objectives of KTtool:

- Summarize and present the results of NMA in a comprehensible and transparent way
- To accommodate the diverse needs of different stakeholders
- assist proper interpretation of the findings

To develop the KTtool

- The experts committee has been established.
- The experts committee members will be involved in the whole procedures for the development of the tool.
- Interviews with different stakeholders will be performed to understand their needs.

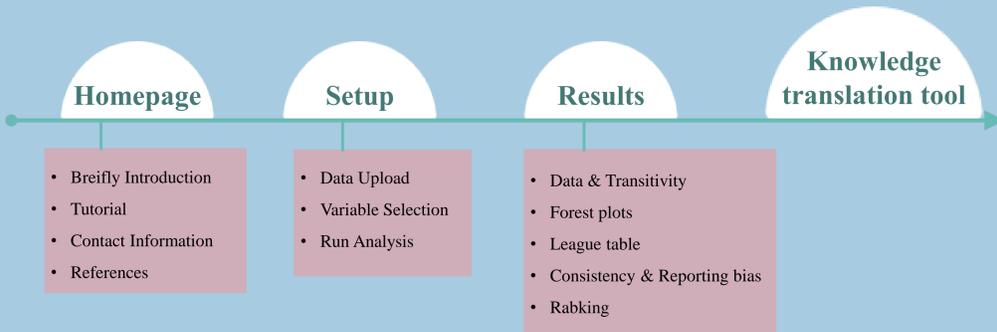
Languages used for development

- Python
- Javascript
- R
- CSS

* The development code is fully openly accessible at <https://github.com/CER-METHODS/NMAstudio-app>.

NMAstudio2.0 <https://www.nmastudioapp.com/home>

Several pages in NMAstudio2.0:



Step 1. Upload your dataset & Select several variables from it

Drag and Drop or [Select a File](#)

Seven selection boxes needed to be completed

Step 2. Select potential effect modifiers for transitivity checks

Step 3. Run analysis & Submit the results

Step 4. Get the results on "Results" page and interact with them.

Scalable Knowledge translation tool

Several modules in the tool:

Several interactive functions in the tool:



1. **Select your profile**

2. **Information Boxes**

3. **Interactive Table**

Reference Treatment	P score (Ranking)	Risk per 1000	Scale lower (forestplots)	Scale upper (forestplots)
> ADA	0.45	Enter a number	Enter a value for lower	Enter a value for upper
> APRE	0.22	Enter a number	Enter a value for lower	Enter a value for upper
> BIME	0.9	Enter a number	Enter a value for lower	Enter a value for upper
> BRODA	0.66	Enter a number	Enter a value for lower	Enter a value for upper
> CERTO	0.37	Enter a number	Enter a value for lower	Enter a value for upper
> CICLO	0.27	Enter a number	Enter a value for lower	Enter a value for upper
> DEUCRAVA	0.48	Enter a number	Enter a value for lower	Enter a value for upper
> ETA	0.3	Enter a number	Enter a value for lower	Enter a value for upper
> FUM	0.12	Enter a number	Enter a value for lower	Enter a value for upper
> GUSEL	0.65	Enter a number	Enter a value for lower	Enter a value for upper
> IFX	0.96	Enter a number	Enter a value for lower	Enter a value for upper
> IXE	0.9	Enter a number	Enter a value for lower	Enter a value for upper

Example 1.

Reference Treatment	P score (Ranking)	Risk per 1000	Scale lower (forestplots)	Scale upper (forestplots)
> ADA	0.45	Enter a number	Enter a value for lower	Enter a value for upper
> APRE	0.22	Enter a number	Enter a value for lower	Enter a value for upper



Click a cell in 'Reference Treatment' to open the nested table.

Example 2.

Specify a value for the reference treatment to get the absolute values in the nested table.

Reference Treatment	P score (Ranking)	Risk per 1000
> PBO	0	20

Treatment	Mixed effect 95%CI	Absolute Effect	Absolute Difference
ADA	0.44 (0.26, 0.76)	8 per 1000	12 less per 1000
APRE	1.75 (1.59, 1.91)	35 per 1000	15 more per 1000
BIME	1.39 (1.22, 1.58)	27 per 1000	7 more per 1000

Example 3.

Options to display different information in the forest plots in the nested table.

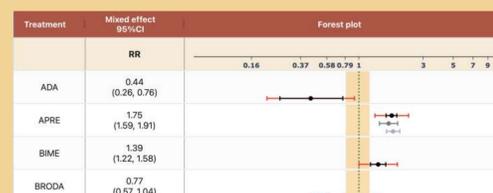
Options (For the forest plots in the table)

Enter the minimum clinical difference value: 0.2

Add prediction interval to forestplots

Add direct effects to forestplots

Add indirect effects to forestplots



Discussion

- NMAstudio offers an extensive interactivity between the network plot and a range of essential NMA outputs.
- NMAstudio offers more flexibility with no restrictions on variable names and number of outcomes.
- NMAstudio generates boxplots for transitivity checks and provides options to save and load projects.
- KTtool overcomes the problem of space restrictions.
- KTtool allow end-users to get a global picture of data, assumptions, results, limitations, uncertainty, etc.
- KTtool makes the communication of findings more efficiently.

Acknowledgement

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