THE USE OF NETWORK META-ANALYSIS TO COMPARE DIFFERENT MEASURES OF MEDICATION ADHERENCE

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OBJECTIVES

Network meta-analysis (NMA), as an extension of pairwise meta-analysis, is a statistical technique able to provide the effects of all available comparators in one single model, accounting for both direct and indirect evidence. Our aim was to evaluate the effect of different measures of adherence in the comparative effectiveness of complex interventions to enhance patients' medication adherence.

METHODS

Electronic searches were conducted in PubMed (November 2017) to gather studies of interventions that aimed to improve medication adherence in short-periods of time (until 3 months) in any clinical condition. Self-report, pill count and MEMS (medication event monitoring system) were the measures of adherence evaluated in this study. An overall composite measure and an objective composite measure were also calculated. Network plots and consistency models for each measure of adherence were built (software Addis 1.16.7). The surface under the cumulative ranking curve analyses (SUCRA) were performed based on the rank order.

RESULTS

Ninety-one studies were included in the NMA (see Figure 1 for the network plots). Results obtained for all measures of adherence were similar between them and to both composite measures. The interventions containing economic + technical components were the best option (90% probability in SUCRA analysis) with statistical superiority against all the other interventions and standard of care (see Figure 2 and Table 1 with the results of SUCRA analyses).

CONCLUSIONS

- NMA showed to be a reliable technique to compare different measures of medication adherence of complex interventions.
- The use of composite measures may be a reliable alternative to establish a broader picture of adherence.

REFERENCES

1) Tonin FS et al. Network meta-analysis: a technique to gather evidence from direct and indirect comparisons. *Pharm Pract (Granada).* 2017 Jan-Mar;15(1):943.
2) Tonin FS et al. An innovative and comprehensive technique to evaluate different measures of medication adherence: the network meta-analysis. *Res Social Adm Pharm*. 2018 May 19.

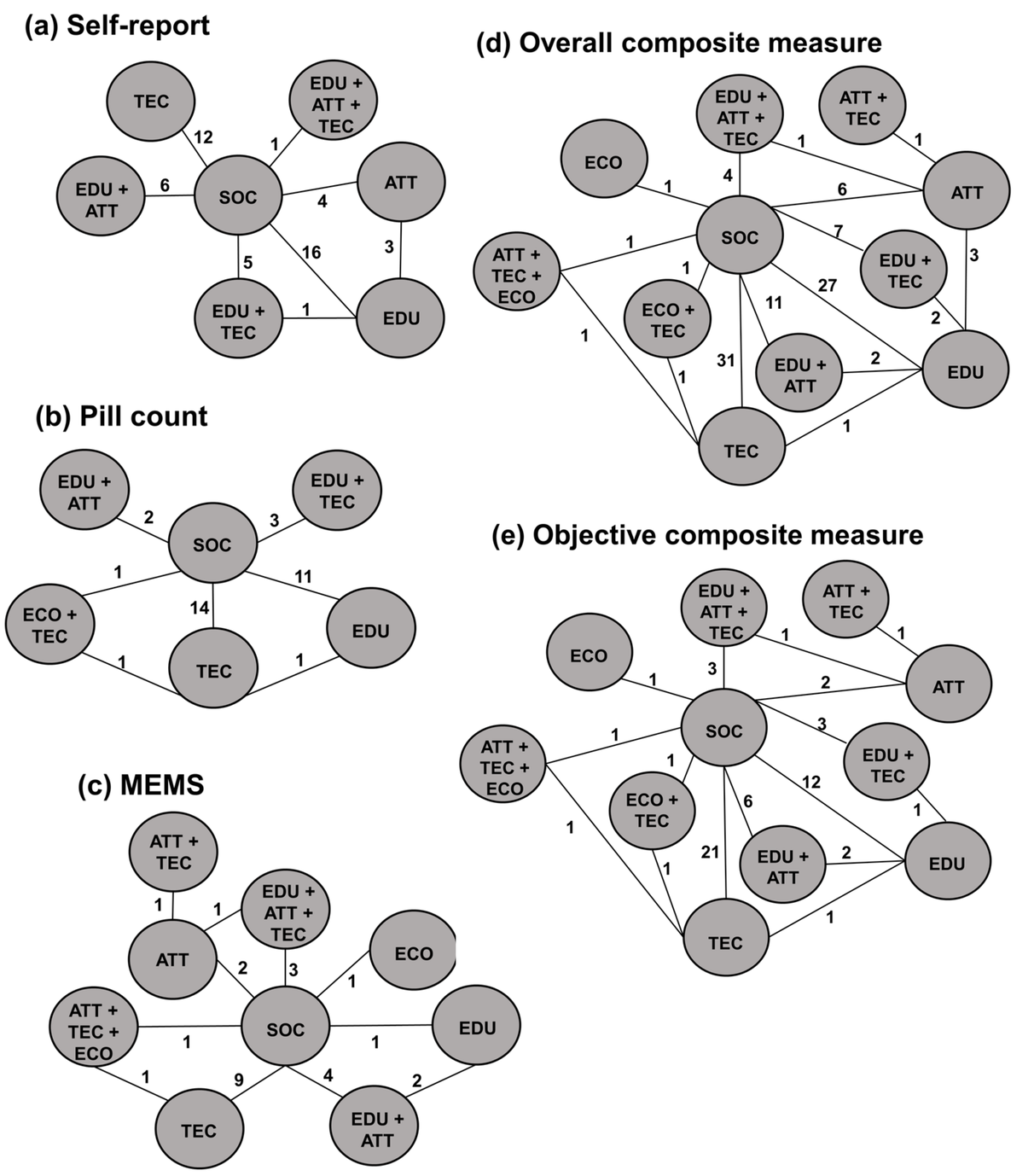

Figure 1. Network diagrams of different measures of adherence for complex interventions. Directly comparable interventions are linked with a line, the number of trials are shown in each line. ATT: attitudinal; ECO: economic; EDU: educational; TEC: technical; SOC: standard of care.

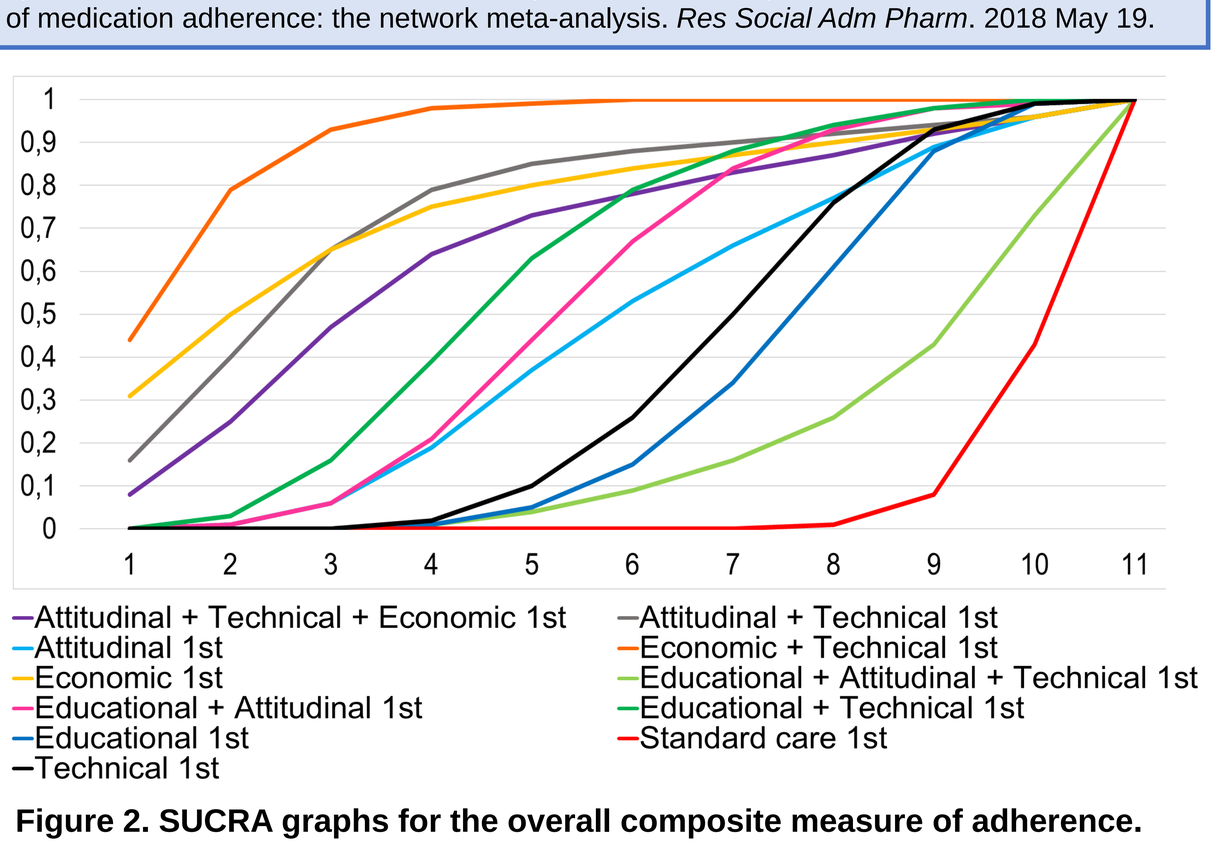

Figure 2. SUCRA graphs for the overall composite measure of adherence.
SUCRA: surface under the cumulative ranking curve.

Table 1. SUCRA results for the composite measures of adherence

	OVERALL COMPOSITE MEASURE	OBJECTIVE COMPOSITE MEASURE
ECO + TEC	92%	91%
ECO	76%	75%
ATT + TEC	75%	75%
ATT + TEC + ECO	68%	65%
EDU + TEC	53%	58%
ATT	45%	44%
EDU + ATT	43%	51%
TEC	40%	36%
EDU	29%	30%
EDU + ATT + TEC	25%	17%
SOC	3%	5%

SUCRA: surface under the cumulative ranking curve. SUCRA values can range from 0% (i.e. the intervention always ranks last) to 100% (i.e. the intervention always ranks first). ATT: attitudinal; ECO: economic; EDU: educational; TEC: technical; SOC: standard of care.