



# Does a research group increase impact on the scientific community or general public discussion?



## Alternative metric-based evaluation

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## Objectives

In this study, we investigated the impact of scientific publications of the ITALIAN SIMPAR group (Study in Multidisciplinary PAin Research\*) using Altmetrics, which is defined as non-traditional metrics and constituting an alternative to more traditional citation impact metrics, such as impact factor and h-index. By correlating traditional and alternative metrics, we attempted to verify whether publications by the SIMPAR group collectively had more impact than those performed by its individual members, either in solo publications or in co-authored publications by non-SIMPAR group.

## Methods

For all of the 12 members of the group we analyzed (pain therapists, biologists, and pharmacologists), we created the Open Researcher and Contributor ID (ORCID) and the ImpactStory accounts, and synchronized these data. We calculated the level metrics for each article manually by dividing the data obtained from the research community by those obtained from the public community. Using Scopus, we retrieved the exact number citations of the articles published by each researcher.



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**Manuela De Gregori**  
21 Articles  
403 saves  
13 tweets  
6 views

- Continuous wound infusion of local anesthetic and steroid after major abdominal surgery: study protocol for a randomized controlled trial  
(2015) Bugada, De Gregori, Compagnone, et al. Trials
- Effect of postoperative analgesia on acute and persistent postherniotomy pain: a randomized study  
(2015) Bugada, Lavandhomme, Ambrosoli, Klersy, Braschi, Fanelli, Sacconi, Jotti, Allegri, Journal of Clinical Anesthesia
- Pain assessment in animal models: do we need further studies?  
(2014) Colanichi, Giglio, de Gregori, Malafoglia, Raffaeli, Compagnone, Visai, Petroni, Avanzini, Muscoli, Calabrese, Dominioni, Allegri, Vigano, JPR

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Fig. 1 : tools of the study

## Results

We analyzed 759 articles, 18 of which were published by the SIMPAR group. Altmetrics demonstrated that the SIMPAR group publications were more likely to be saved (77.8% vs 45.9%), discussed (61.1% vs 1.1%,  $p<0.0001$ ), and publically viewed (11.1% vs 1.3%,  $p=0.05$ ) than the individual publications (Fig. 2). Furthermore, we found that the alternative metrics were generally highly correlated to Mendeley Readers (Pearson  $r=0.47$ ,  $p<0.0001$ ) (Fig. 3).

	Facebook post	Tweets	Impact Story views	Mendeley Readers
Tweets	0.02 (0.81)			
Impact Story views	-0.01 (0.87)	0.13 (0.09)		
Mendeley Readers	-0.04 (0.60)	0.01 (0.87)	0 (0.93)	
Scopus citation	-0.05 (0.53)	-0.10 (0.18)	-0.04 (0.57)	0.47 (<0.001)

Fig. 2 : Correlation coefficient (p-value) between Scopus citations and Altmetrics components

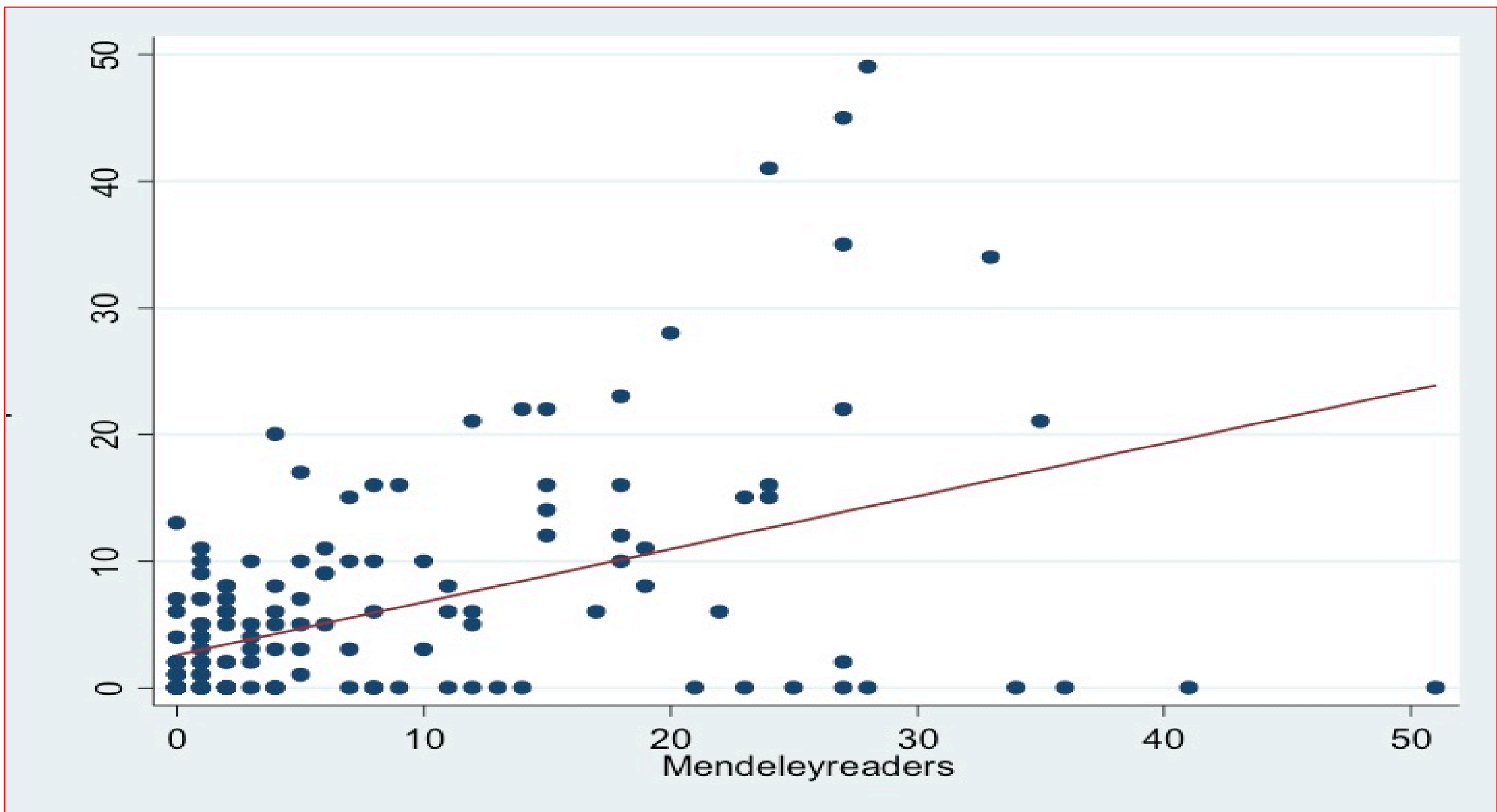


Fig. 3 : Correlation between Mendeley readers and Scopus citations

## Conclusions

This result supports the importance of multidisciplinary research groups on the impact of scientific literature; the interaction and synergy among the research participants allowed us to obtain high impact-literature in such a delicate field such as pain medicine. Finally, our findings demonstrate the potential of Altmetrics in estimating the value of a group's research products

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