Replication validity of biomedical findings reported by newspapers

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Which scientific studies are covered by newspapers?

Database of more than 5000 scientific studies
Replication validity known

- Type of study: Initial/subsequent study
- Type of association: lifestyle type/non-lifestyle type
- Journal IF

4723 scientific studies → 156 covered → 1475 newspapers articles
306 meta-analyses → 5 covered → 86 newspapers articles
What make a study newsworthy?

13.1% initial studies / 2.4% subsequent studies
9.9% lifestyle studies / 2.3% non lifestyle
Are the studies covered by newspapers validated?

Percentage of replicated studies

- Non-lifestyle initial
- Non-Lifestyle subsequent
- Lifestyle all

For different IF ranges:
- All
- 0<IF<10
- 10<IF<30
- IF>30
Null findings and contradictory studies

Null Findings
53 initial studies covered: no null findings
14/103 subsequent studies covered: only 5% newspaper article

Contradictory studies
Only one study (50 newspaper articles) was covered again in 4 newspaper articles to mention its invalidation
69% no contradictory studies published in high impact factor journal: no visible study
31% Contradictory study published in high impact factor journals: visible studies: just 1 covered
Conclusion

- Journalists preferentially cover initial studies
- Journalists cover studies that are poorly validated
- Journalists rarely cover negative findings and invalidation

Journalists, by selecting initial studies, and scientists by pushing the publication of their results in prestigious journals are equally complicit of the poor information presented to the public in the press.
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