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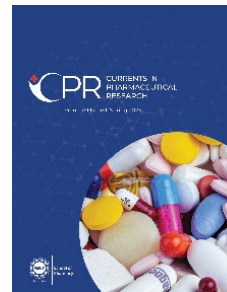
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# Publication Bias: A Brief Concept Note

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## 1. INTRODUCTION

The term "publication bias," often known as the "file drawer problem," refers to the tendency in the published literature to favor studies with positive or significant outcomes over those with negative or insignificant outcomes [1, 2]. As a result, the published literature on a particular topic may appear incomplete, fabricated, and false [1]. Robert Rosenthal was the first to introduce the term "file drawer problem" in 1979. Afterwards, in the 1980s, the use of this term became very common in scientific and research communities [3]. When researchers are more likely to submit and publishers, editors, and reviewers are more willing to accept positive or significant results as compared to negative or insignificant ones, this is known as positive-results bias, a form of publication bias [4]. The ethical guidelines for editors, reviewers, publishers, and researchers about publication bias have been established by the World Medical Association, the International Committee of Medical Journals, and the Committee on Publication Ethics [5, 6]. It is a very common issue in research publications, especially in meta-analyses and systematic reviews, affecting the originality and worth of the published scientific conclusions [7–9]. The validity and importance of literature, particularly the literature related to psychology and medicine, are severely impacted by the publication bias, according to one study [10]. Publication bias challenges the integrity of scientific knowledge and research [11].

## 2. IMPORTANT ASPECTS AND CAUSES OF PUBLICATION BIAS

Studies with significant findings are more likely to be submitted by researchers and published in journals. Such studies comprise selective research publications [12–14]. Selective reporting occurs when researchers emphasize results that support their hypotheses, while downplaying contradicting findings [15–18]. An important contributing factor of publication bias is that studies conducted in other languages such as Japanese, Chinese, and French are less likely to get published, while

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English-language studies have a higher probability of getting published [19–22]. Similarly, another dimension of publication bias is selective citation or citation bias. Indeed, research with favorable outcomes is more likely to receive citations [23–26]. Published research may exaggerate the actual impact of a treatment or phenomenon, contributing to publication bias [27]. It can result in biased meta-analyses, which can misrepresent clinical research, practices, and policy issues. It can also result in the duplication of research efforts, as researchers may mistakenly duplicate studies that have already been completed but not yet published [28–30]. Publication bias can be reduced by the registration of clinical trials, reducing the number of selective publications and saving millions of lives [28, 30, 31]. Open-access publishing has become very common in today's world. It increases the visibility and accessibility of all research literature, regardless of their results [32, 33].

### 3. CONCLUSION

Publication bias, however, poses a substantial threat to the integrity of scientific research, impacting the validity and reliability of the findings. Selective reporting of statistically significant data may result in an exaggeration of treatment effects, misleading meta-analyses, and inappropriate clinical practices. Therefore, to ensure a more balanced representation of scientific data, researchers, policymakers, reviewers, academicians, and editors must actively address publication bias.

### 4. SIGNIFICANCE

This concept note is helpful for publishers, young editors, reviewers, and aspiring scientific researchers to acquaint themselves with the notion of publication bias. As a researcher, I believe this is a critical aspect of scientific publishing and writing. It should be included in postgraduate curricula, so it may help the aforementioned group of people.

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