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Review of Altmetric Index Articles of Iranian Medical Publications Indexed in PubMed Information Database in Scientific Social Media

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Abstract

Purpose: The aim of this study is to explore the articles included in the Altmetric index of Iranian medical journals that are listed in the PubMed database within scientific social networks.

Methodology: This applied research utilized a survey methodology and a scientometric approach based on altmetric indicators. The statistical population for this study comprised all medical articles from 2018 available in the PubMed medical database. Data collection was facilitated through the use of the bookmarklet tool, which is accessible for free on the Altmetrics Institute website.

Findings: The results revealed that 23% of the articles mentioned at least once on social networks received an altmetric score. The average citation count for articles with an altmetric score was 2.91. The altmetric average for all articles was 0.6 compared to the average citation count of 1.6, indicating that articles received roughly a single citation for every altmetric score. Among social networks, Twitter was the most popular with 1036 articles (21%), followed closely by Mendeley with 935 articles (19%).

Conclusion: The coverage of altmetrics for articles in Iranian medical journals listed in the PubMed database was found to be satisfactory. The study also highlighted a significant and positive correlation between the number of citations received and the altmetric score, suggesting that articles with higher citation counts were also more frequently discussed on social networks.

Value: This article provides insights into the altmetrics of medical science articles indexed in a reputable medical database, with the measured indicators relevant for use in various scientific social networks.

Key Words: ***Altmetrics, Scientometrics, Medical Journals, Social-Scientific Networks, Social-Scientific Media***

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Extended Abstract

Introduction: Scientific journals play a crucial role in facilitating the rapid publication of materials and disseminating the results of studies and research. They serve as a reliable means of communication between researchers, garnering attention from research centers and scientific societies. The presence of a country's scientific publications in citation indexes and the indexing of journals in information and citation databases are essential methods of enhancing scientific reputation and fostering international collaboration in the production of knowledge. The indexing of articles in databases not only increases visibility and the likelihood of collaboration in advancing knowledge, but also enables easy and timely access to current scientific developments. Moreover, it allows researchers to track the evolution of knowledge over time through cited and citing sources within the research field. Initially, the number of views of journal articles was a common metric used by authors to gauge impact. However, the advent of web technologies has expanded the visibility of articles, with publishers now providing data on the number of times HTML and PDF versions are viewed, read, and downloaded on their websites. For instance, in 2004, BMJ magazine pioneered the publication of viewing statistics for its articles (Selajegha and Mohammadian, 2014).

Purpose: The aim of this study was to explore the articles included in the Altmetric index of Iranian medical journals that are indexed in the PubMed database and shared on scientific social networks.

Methodology: The current research was conducted with a practical purpose, utilizing the altmetrics method which focuses on evaluating metrics derived from the social web. The statistical population for this research comprised all articles published in Iranian medical journals indexed in the PubMed database in 2018, possessing both a digital object identifier and a specific PubMed indicator. It was important to select articles from 2018 to allow for sufficient time to accumulate citations, as the process of citing an article can span several years. This timeframe also aimed to maintain consistency in the relationship between citation index and Altmetrics index. A total of 75 medical journals out of the 79 indexed journals available in PubMed were included in the review. Among the 9913 retrieved articles, 4917 were chosen for having a digital identifier and PubMed indicator, in line with the requirements for Altmetric studies. The research articles were sourced from the PubMed database and data collection was carried out using the Altmetric bookmarklet tool from the Altmetrics website. This tool, integrated as a Firefox browser plugin, facilitated manual retrieval of altmetric scores for each document. Whenever an altmetric score was present, data pertaining to social media mentions were also extracted.

Findings: The analysis revealed that 23% of the articles mentioned on social networks received an altmetric score. Articles with altmetric scores had an average citation count of 2.91. Comparing the average altmetric score of all articles (0.6) to the average citation count of all articles (1.6) indicated that articles garnered roughly one citation for every altmetric mention. Among social networks, Twitter was the most prevalent platform with 1036 mentions (21%), followed by Mendeley with 935 mentions (19%). Additionally, a correlation test highlighted a statistically significant positive relationship among the variables studied.

Table 1. Statistics of Iranian medical journal articles indexed in the PubMed database based on the lowest Altmetrics indices.

ردیف	Title of the Paper	Author	Altmetric Score	Twitter	Mendeley	CiteULike	Google+	Facebook	Blogs	Reddit	News outlets	Wiki Pedia	Video	Q&A thread
1	Retaining Doctors in Rural Bangladesh: A Policy Analysis	Taufique Joarder	371	4	59	-	1	-	-	-	46		-	-
2	Can Light Emitted from Smartphone Screens and Taking Selfies Cause Premature Aging and Wrinkles?	N Arjmandi	350	7	59	1	-	-	2	-	35	-	-	-
3	Unequal Gain of Equal Resources across Racial Groups	Shervin Assari	301	۱۶	4	-	-	1	-	-	42	-	-	-
4	Critical Care Medicine: Bangladesh Perspective.	Nafseen Mostafa	273	1	-	-	-	-	4	-	32	-	-	-
5	The Effect of Yoga on Stress, Anxiety, and Depression in Women	Masoumeh Shohani	143	61	99	-	-	-	1	-	11	-	1	-
6	The burden of firearm violence in the United States: stricter laws result in safer states	Faisal Jehan	102	52	27	-	-	-	2	-	6	-	-	-
7	An fMRI investigation of the neural correlates underlying the autonomous sensory meridian response (ASMR)	Bryson C Lochte	86	8	78	-	-	-	1	-	8	1	4	1

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8	The Applications of Virtual Reality Technology in Medical Groups Teaching	Mahnaz Samadbeik	71	1	-	-	-	-	-	-	8	-	-	-
9	Assessing the Effect of High-Performance Inulin Supplementation via KLF5 mRNA Expression in Adults with Type 2 Diabetes: A Randomized Placebo-Controlled Clinical Trail	Abed Ghavami	67	1	22	-	-	-	-	-	9	-	-	-
10	Use of hyaluronic acid gel filler to improve contact lens wear in patients with deep sunken superior sulcus	Mehryar Rayt Taban	55	2	5	-	-	-	-	-	7	-	-	-

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The relationship between citations of articles and altmetric score of articles indicates that as the presence of articles in social networks and altimetric score increase, the number of citations received in articles in PubMed also increases. Additionally, the results of the linear regression test in this study showed that the regression model is significant. The presence of articles on social media can predict the number of citations.

Conclusion: One critical component in altmetrics for identifying and extracting articles using the altmetric bookmarklet is having a digital identifier. However, a small percentage of medical articles with a digital identifier are seen in scientific social networks. This issue may suggest a lack of utilization of scientific communication tools and social networks by medical researchers for research purposes. Reasons for this may include limited knowledge of effective use of social networks for medical research and a lack of focus on engaging with a broader audience. Interestingly, articles with the highest Altmetrics score and most attention in scientific social networks were those where researchers had international collaborations, highlighting the impact of such partnerships on Altmetrics scores and evaluation. Twitter emerged as the most popular social network platform, with Iranian medical journal articles in PubMed being frequently tweeted. Altmetric coverage of articles in Iranian medical journals indexed in the PubMed database was found to be at an acceptable level. Considering the significant and positive relationship between the number of

citations received and the Altmetric score, it can be inferred that articles receiving more citations are also gaining visibility on social networks.

Value: This article delves into the altmetrics of medical science articles indexed in a reputable medical database, utilizing indicators commonly used in scientific social networks.

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