*Original Research*

# The Status of the Top Midwifery Journals Indexed In Scopus Database: The Journals' Social Impact vs. the Journals' Professional Impact

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## Abstract

Studying the social impact of scientific outputs on social media alongside their professional impact in the scientific database could lead the policymakers to outline the scientific roadmap. The current research aimed to investigate the relationship between altmetrics activity (social impact) and the quality of the maternity and midwifery journals (professional impact) indexed by Scopus in 2018. In this descriptive and relational research, altmetric and bibliometric indicators were utilized to study journal performance. The population included all maternity and midwifery journals in the Scopus (n=25). Altmetric Explorer, Scopus, Scimago Journal, Country Ranking (SJR), plus Journal Metrics were used for data gathering. Moreover, data analysis was conducted using descriptive and inferential tests in Microsoft Excel and SPSS. Of the 1944 papers with unique DOIs published in maternity and midwifery journals in 2018, 952 articles were mentioned at least one time on social media platforms (altmetrics coverage of 48.97%). The highest rank of the altmetrics coverage belonged to the Midwifery journal, The Journal of Perinatal and Neonatal Nursing, and Women and Birth, respectively. On the other side, the highest rank of the altmetrics attention belonged to Breastfeeding Medicine, The Journal of Perinatal and Neonatal Nursing, and Geburtshilfe und Frauenheilkunde, accordingly. There was a positive and statistically significant relationship between the altmetrics activity of journals and their qualitative metrics. The current research revealed that papers published in higher quality journals are more likely to be shared on social media platforms and get more altmetrics attention.

## Introduction

With the development of web 2.0 or the social web, in the 21st century, the interactions of human beings have been transformed dramatically in various dimensions (Graziani & Petrini, 2018). A few years ago, traditional media, based on their functionality, promoted the

unidirectional way, from the sender to the receiver. But nowadays, as social media emerge, the interactive atmosphere for sharing ideas has been evolved, especially in scientific settings (Erfanmanesh, 2018). Many social web tools have emerged to promote scientific communications and collaborations in the web context. Some examples are included online social networks, reference management tools, collaborative social spaces, content sharing tools, blogs and microblogs, and social peer-reviewing capabilities (Darling, Shiffman, Côté & Drew 2013). Alongside the increase of such capabilities in social media, new metrics have been introduced following web environments to study the effectiveness of scientific outputs. One of the most important metrics used for evaluating the effect of scientific outputs in social media is called "altmetrics"; these emerging metrics could be used alongside traditional citation-oriented metrics (Thelwall, 2018). Altmetrics can develop the concept of research effect and mentions the aspects of scientific outputs effectiveness that has not been considered by traditional bibliometrics, such as citation (Holmberg, 2015). The number of one document assesses this evaluating method; for example, a scientific paper is being viewed, bookmarked, saved, downloaded, liked, clicked, and shared. Sometimes this evaluation is appraised by the number and quality of the comments which one document received (Erfanmanesh, 2018).

Altmetrics is not exclusively limited to the articles. It has been used to study the effectiveness of all kinds of materials on social media. Furthermore, it can be used to share and study the effect of in-press scientific publications. Altmetrics is not limited to specialists; mainly, it includes all people over the world. So, some researchers believe that altmetrics could evaluate the social impact of scientific products (Holmberg, 2015).

Studying the effect of scientific outputs on social media could lead scholars and policy-makers in different fields to better understand their publications' social impact. The correct perception of the social impact of scientific outputs could play a vital role in defining their status alongside the awareness of their professional impact, such as the number of citations, impact factor, h-index, etc. Midwifery is one of the most important academic fields which has a crucial role in educating pregnant women during their pregnancy, birth, and even after the birth of the baby (Henriksen & Lukasse, 2016). As a result, studying the effect of midwifery scientific outputs on the social web alongside the effectiveness of these publications in scientific databases has a vital significance for both midwifery specialists and laypersons.

According to the previous perspective, although altmetrics studies usually investigate the articles based on article-level metrics, the present study attempted to put these metrics into journal-level metrics. So, we explore the altmetrics metrics of midwifery and maternity journals indexed in Scopus as the largest citation database, plus their citation metrics.

## Literature Review

Initially, altmetrics were proposed to assess the societal impact of research in 2010, and accordingly, many studies were conducted in this field. Some researchers studied the relationship between altmetrics indexes and the citation parameters. Eysenbach (2011) explored the tweets of articles published in medical internet journals. It was a significant correlation between the sharing of the articles on Twitter and the number of citations received. Biomedicine is an absorbing field for altmetrics researchers. Haustein, Peters, Sugimoto, Thelwall & Larivière (2014) reported the positive relationship between altmetrics activity and citation parameters in biomedical researches. Sotudeh, Mazarei and Mirzabeigi (2015) announced the significant and poor correlation between bookmarking the articles in CiteUlike and the citations

received in library and information science. Nuredini and Peters (2016) reported the positive relationship between the altmetrics score of papers and the number of citations received in WOS in economics and business. A similar significant correlation was reported in Peoples, Midway, Sackett, Lynch, Cooney (2016), and Xia, Su, Wang, Zhang, Ning & Lee (2016). Ebrahimy, Setareh and HosseinChari (2016) claimed the significant relationship between citations received by articles plus the impact factor of the journals and their altmetrics score. Besides, Erfanmanesh (2017) reported a similar positive correlation in library and information science. Barakat et al. (2018) showed a significant relationship between altmetrics attention and the number of citations received in cardiovascular journals. Maggio, Leroux, Meyer & Artino (2018) demonstrated the positive correlation between the articles with high altmetrics scores and their traditional bibliometric measures in health professions education. Warren, Patel & Boyd (2020) reported no significant correlation between altmetrics score and citations received in the oral and maxillofacial surgery literature.

According to this background, the reciprocal relationship between articles mentioned on social media and their qualitative parameters could be expected.

## Methods and Materials

This descriptive-analytical study was applied research based on its purpose. It was done by a correlational approach in a scientometrics study using altmetrics metrics. To evaluate the effectiveness of midwifery and maternity journals indexed in Scopus, we used Altmetrics Bookmarklet according to its credibility and importance. Using this tool, we could calculate the number of articles downloads, their attention rate and mention them on social media, news outlets, blogs, etc. Altmetrics Bookmarklet gathers journal articles data from news, blog posts, and tweets and gives each document a score. Given this background, in this paper, we calculated all mentions to journal articles of midwifery and maternity indexed in Scopus or published video, text, and document, as well as related bookmarks using Altmetrics Bookmarklet. It led to different scores for each document. The scores' average was considered an altmetrics score for each journal; this score indicated the rate of shares, attention, and use of these articles on social media. The assigned altmetrics score for each document represents the quantity and quality of audience attention that one document is being received on social media. It would be mentioned that Altmetrics Bookmarklet only investigates the articles which have a DOI or PMID. The population of the study included all midwifery and maternity journals indexed in the Scopus database in 2018. Data were collected on 29 November 2020. Of 27 these journals, two journals were excluded. One was "Nursing and Midwifery Studies," with content coverage assigned to 2019 onwards; the other was "Based Midwifery Evidence," whose content coverage was assigned before 2017. Calculating the altmetrics score of each journal, the articles' altmetrics scores of given journals were surveyed. We chose the year 2018 because of the one scientometrics principle: it is necessary to give one year/two years' opportunity for the articles to receive citations and share on the social web (Thelwall & Kousha, 2015). But we should remember it depends on the field of science, and it takes between 3 and 5 years to receive citations.

So, the midwifery and maternity journals indexed in Scopus in 2018 were checked out on the DOI website. After DOI verification, the articles were searched using Altmetrics Bookmarklet. If the paper had an altmetrics score, then we click on it to see additional information. Altmetrics activity of the midwifery and maternity journals was investigated using altmetrics coverage and altmetrics attentions. In this study, we calculated altmetrics coverage,

i.e., the presence of journal papers on social media, by dividing the number of the given journal articles which at least once shared on social media by the total number of articles published in that journal in 2018. The altmetrics attention or mean altmetrics score was calculated according to the attention's mean of the articles published in each journal in 2018 on social media.

To study the quality of the midwifery and maternity journals, we used four metrics included SJR, SNIP, CiteScore, and Citations per Paper (Erfanmanesh, 2018). The prestige of a journal weights SJR. Journal's subject field, quality, and reputation have a direct effect on the citation value. SNIP measures a document's contextual citation impact by weighting citations based on the total number of citations in a subject field. It helps the reader make a direct comparison of sources in different subject fields. Calculating the CiteScore is based on the number of citations to documents (articles, reviews, conference papers, book chapters, and data papers) by a journal over four years, divided by the number of the same document types indexed in Scopus and published in those same four years. These metrics were extracted from the journal metrics section in the Scopus database. The citation per paper for each midwifery and maternity journal was calculated manually. We used SPSS software and Microsoft Excel for processing data. To investigate the correlation between altmetrics activity of midwifery and maternity journals and their quality, first, we applied the Kolmogorov-Smirnov test and subsequently the Spearman correlation test.

## Findings
### The rate of attention to/share the midwifery and maternity journals on social media

Figure 1 represents the condition of the articles in midwifery and maternity journals indexed in the Scopus database.
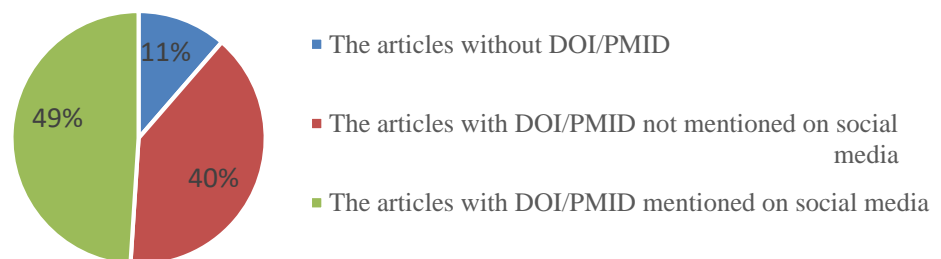


*Figure 1*: The proportion of articles with/without altmetrics score in midwifery and maternity journals

As shown in Figure 1, of 1944 articles in midwifery and maternity journals indexed in the Scopus database, 11% (n=221) had not a DOI/PMID. So, we couldn't study them using Altmetrics Bookmarklet. Among the articles with DOI/PMID, 49% (n=952) were mentioned by social media. But 40% (n=771) had not been mentioned on any social media.

Figure 2 represents the presence and share of the midwifery and maternity articles on different social media.
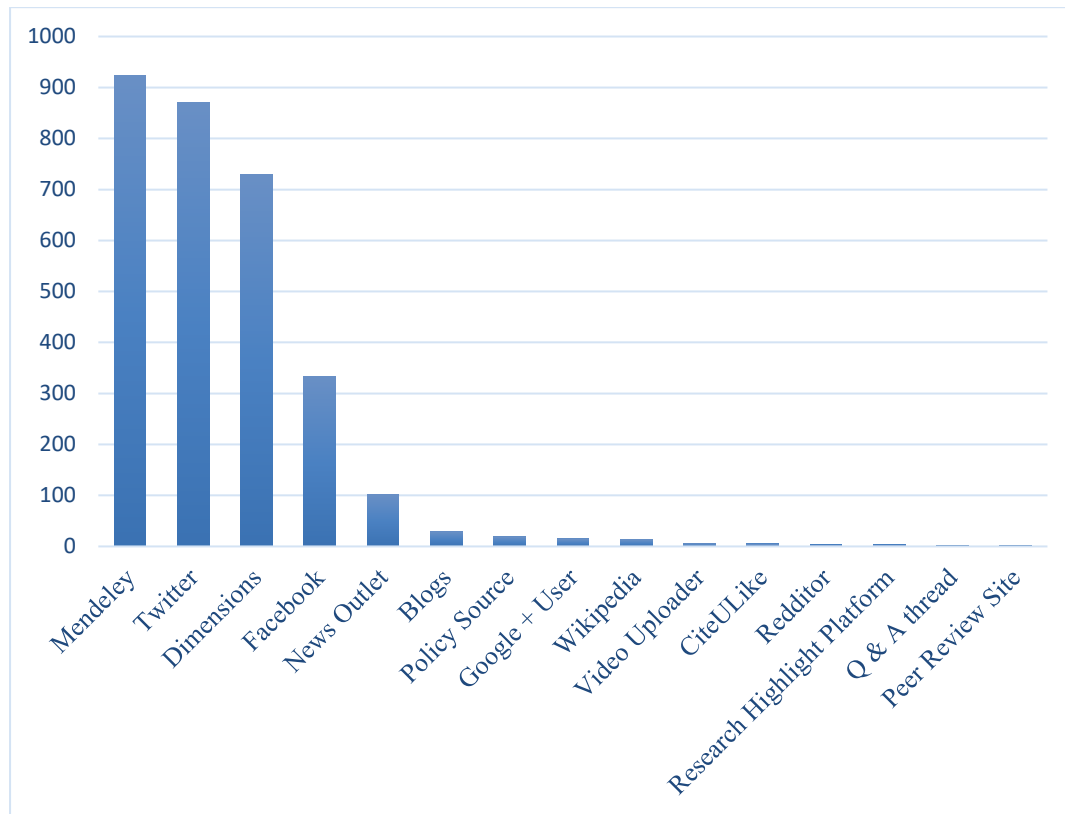
*Figure 2*: The distribution of the midwifery and maternity articles with altmetrics score on social media

As indicated in Figure 2, Mendeley, Twitter, and Dimensions were the primary sources of attention in midwifery and maternity articles on social media platforms.

The breakdown of the attention score showed the following sources include Mendeley with 923 articles (96.95%) and 31487 sharing, Twitter with 870 papers (91.39%), and 17600 sharing, with a total of 23,468,387 followers, and Dimensions with 730 articles (76.68%) and 33314 sharing. Then, Facebook with 333 articles (34.98%) and 950 sharing, News Outlet with 101 papers (10.61%) and 802 sharing, Blogs with 29 documents (3.05%), and 34 sharing, Policy Source with 19 articles (1.99%), and 19 sharing, Google Plus with 15 papers (1.57%) and 15 sharing, Wikipedia with 14 documents (1.47%) and 16 sharing, Video Uploader with six articles (0.63%) and six sharing, CiteULike with five papers (0.52%) and six sharing, Research Highlight Platform and Reddit with three papers (0.31%) and three sharing, and Paper Review Site and Q & A thread with 1 article (0.10%) and one sharing.

**The rate of presence of the midwifery and maternity journals on social media**

As shown in Table 1, 25 midwifery and maternity journals indexed in the Scopus database were ranked based on their altmetrics coverage, i.e., the presence percentage of the articles on social media.

Table 1

*The presence of the midwifery and maternity journals on social media based on their altmetrics coverage*

| Rank | Journal | Journal Quartile | Published Article | Articles with Altmetrics Score | Altmetrics Coverage (%) |
|---|---|---|---|---|---|
| 1 | Midwifery | Q1 | 233 | 224 | 97.14 |
| 2 | The Journal of Perinatal and Neonatal Nursing | Q2 | 57 | 50 | 87.72 |
| 3 | Women and Birth | Q1 | 123 | 101 | 82.11 |
| 4 | Women's Health Issues | Q1 | 80 | 60 | 75 |
| 5 | Sexual and Reproductive Healthare | Q2 | 76 | 52 | 68.42 |
| 6 | Breastfeeding Medicine | Q1 | 156 | 106 | 67.95 |
| 7 | International Journal of Women's Health | Q1 | 87 | 56 | 64.37 |
| 8 | MCN The American Journal of Maternal Child Nursing | Q2 | 93 | 52 | 55.91 |
| 9 | British Journal of Midwifery | Q3 | 153 | 82 | 53.59 |
| 10 | Journal of Midwifery and Women's Health | Q1 | 106 | 47 | 44.34 |
| 11 | Journal of Neonatal Nursing | Q3 | 63 | 22 | 34.92 |
| 12 | Journal of Obstetric Gynecologic and Neonatal Nursing | Q1 | 111 | 34 | 30.63 |
| 13 | Iranian Journal of Nursing and Midwifery Research | Q3 | 85 | 23 | 27.06 |
| 14 | Geburtshilfe und Frauenheilkunde | Q2 | 131 | 31 | 23.66 |
| 15 | International Journal of Community Based Nursing and Midwifery | Q2 | 33 | 4 | 12.12 |
| 16 | International Journal of Childbirth | Q4 | 29 | 3 | 10.34 |
| 17 | Zeitschrift fur Geburtshilfe und Neonatologie | Q3 | 46 | 3 | 6.52 |
| 18 | Revue Sage – Femme | Q4 | 38 | 2 | 5.26 |
| 19 | Africa Journal of Nursing and Midwifery | Q4 | 22 | 0 | 0 |
| 20 | HAYAT | Q3 | 32 | - | - |
| 21 | Breastfeeding Review | Q2 | 12 | - | - |
| 22 | Practising Midwife | Q3 | 79 | - | - |
| 23 | Matronas Profesion | Q4 | 25 | - | - |
| 24 | AIMS Journal | Q4 | 22 | - | - |
| 25 | Contemporary Ob/Gyn | Q4 | 47 | - | - |
| | Total | | 1944 | 952 | 48.97 |

According to Table 1, of 25 midwifery and maternity journals, 18 journals were shared at least one time on social media in 2018. Midwifery journal had the highest altmetrics coverage on social media in midwifery and maternity journal indexed in the Scopus database with 97.14%. Other ranks belonged to the Journal of Perinatal and Neonatal Nursing with 87.72%, Women and Birth with 82.11%, and Sexual and Reproductive Healthcare with 68.42%. In this section, we couldn't study the journal presence on social media entitled Breastfeeding Review, Hayat, Practising Midwife, Contemporary Ob/Gyn, Matronas Profesion, and AIMS Journal because of the lack of DOI/PMID in their articles.

**The rate of attention to the midwifery and maternity journals on social media**

In this study, the rate of attention to each journal on social media was calculated through the mean altmetrics score of the published articles in a given journal. Table 2 indicates the ranking of the midwifery and maternity journals indexed in the Scopus database based on their mean altmetrics score.

Table 2

*The rank of the midwifery and maternity journals on social media based on their altmetrics attention*

| Rank | Journal | Journal Quartile | Articles with Altmetrics Score | The Sum of the Altmetrics Score of Published Articles | The Mean Altmetrics Score | The Highest Altmetrics Score |
|------|---------|------------------|-------------------------------|-------------------------------------------------------|---------------------------|------------------------------|
| 1 | Breastfeeding Medicine | Q1 | 106 | 3105 | 29.29 | 360 |
| 2 | The Journal of Perinatal and Neonatal Nursing | Q2 | 50 | 866 | 17.32 | 629 |
| 3 | Geburtshilfe und Frauenheilkunde | Q2 | 31 | 532 | 17.16 | 259 |
| 4 | Women and Birth | Q1 | 101 | 1636 | 16.20 | 223 |
| 5 | Women's Health Issues | Q1 | 60 | 912 | 15.20 | 85 |
| 6 | Journal of Midwifery and Women's Health | Q1 | 47 | 696 | 14.81 | 173 |
| 7 | Midwifery | Q1 | 224 | 3067 | 13.69 | 657 |
| 8 | International Journal of Women's Health | Q1 | 56 | 735 | 13.12 | 377 |
| 9 | British Journal of Midwifery | Q3 | 82 | 846 | 10.32 | 322 |
| 10 | Journal of Obstetric Gynecologic and Neonatal Nursing | Q1 | 34 | 315 | 9.26 | 167 |
| 11 | Journal of Neonatal Nursing | Q3 | 22 | 175 | 7.95 | 68 |
| 12 | International Journal of Childbirth | Q4 | 3 | 14 | 4.67 | 12 |
| 13 | Sexual and Reproductive Healthcare | Q2 | 52 | 231 | 4.44 | 27 |
| 14 | MCN The American Journal of Maternal Child Nursing | Q2 | 52 | 189 | 3.63 | 51 |
| 15 | Iranian Journal of Nursing and Midwifery Research | Q3 | 23 | 60 | 2.61 | 14 |
| 16 | International Journal of Community Based Nursing and Midwifery | Q2 | 4 | 6 | 1.5 | 2 |
| 17 | Revue Sage – Femme | Q4 | 2 | 3 | 1.5 | 2 |
| 18 | Zeitschrift fur Geburtshilfe und Neonatologie | Q3 | 3 | 3 | 1 | 1 |
| 19 | Africa Journal of Nursing and Midwifery | Q4 | 0 | 0 | 0 | 0 |
| 20 | HAYAT | Q3 | 32 | - | - | - |
| 21 | Breastfeeding Review | Q2 | 12 | - | - | - |
| 22 | Practising Midwife | Q3 | 79 | - | - | - |

| 23 | Matronas Profesion | Q4 | 25 | - | - | - |
|----|--------------------|----|-----|-------|-------|---|
| 24 | AIMS Journal | Q4 | 22 | - | - | - |
| 25 | Contemporary Ob/Gyn | Q4 | 47 | - | - | - |
| | Total | | 952 | 13391 | 14.07 | - |

According to Table 2, Breastfeeding Medicine had the highest altmetrics attention on social media in midwifery and maternity journal indexed in the Scopus database with 29.29. Other ranks belonged to the Journal of Perinatal and Neonatal Nursing with 17.32, Geburtshilfe und Frauenheilkunde with 17.16, and Women and Birth with 16.20 accordingly. The highest altmetrics score belonged to the article entitled "Maternal and perinatal outcomes by planned place of birth among women with low-risk pregnancies in high-income countries: A systematic review and meta-analysis," published in *Midwifery Journal*. Its altmetrics score was 657, with 728 times mentioned on social media. In this section, like the previous section, we couldn't study the journal presence on social media entitled Breastfeeding Review, Hayat, Practising Midwife, Contemporary Ob/Gyn, Matronas Profesion, and AIMS Journal because of the lack of DOI/PMID in their articles.

**The relationship between the quality of the midwifery and maternity journals and their presence on social media**

In this step, we studied the relationship between the quality of the midwifery and maternity journals indexed in the Scopus database, based on SJR, CiteScore, SNIP, and the mean of citations received per document, and their presence on social media, based on their altmetrics coverage. Kolmogorov-Smirnov test was used to verify the normality of data distribution. Then, the correlation between these two variables was calculated with the Spearman test.

Table 3
*The relationship between the quality of the midwifery and maternity journals indexed in the Scopus database and altmetrics coverage*

| Metrics | N | R | P |
|---------|---|---|---|
| Altmetrics coverage and SJR | 19 | 0.71[**] | 0.0001 |
| Altmetrics coverage and SNIP | 19 | 0.56[**] | 0.005 |
| Altmetrics coverage and CiteScore | 19 | 0.68[**] | 0.001 |
| Altmetrics coverage and the Mean of Citations Received per Document | 19 | 0.55[**] | 0.006 |

As shown in Table 3, there was a positive and significant relationship between the altmetrics coverage of midwifery journals indexed in the Scopus database and four qualitative metrics (P value<0.05). This relationship was stronger for SJR (R=0.71), then for CiteScore (R=0.66), and finally, for the mean of citations (R=0.56), and SNIP (R=0.55). In other words, altmetrics coverage had a more impact on SJR.

**The relationship between the quality of the midwifery and maternity journals and the rate of attention to them on social media**

We studied the relationship between the quality of the midwifery and maternity journals indexed in the Scopus database, based on SJR, CiteScore, SNIP, the mean of citations received

per document, and the rate of attention to them on social media, based on their altmetrics attention. Kolmogorov-Smirnov test was used to verify the normality of data distribution. Then, the correlation between these two variables was calculated with the Spearman test.

Table 4
*The relationship between the quality of the midwifery and maternity journals indexed in the Scopus database and altmetrics attentions*

| Metrics | N | R | P |
|---|---|---|---|
| Altmetrics attentions and SJR | 19 | 0.53** | 0.008 |
| Altmetrics attentions and SNIP | 19 | 0.29* | 0.02 |
| Altmetrics attentions and CiteScore | 19 | 0.47** | 0.009 |
| Altmetrics attentions and the Mean of Citations Received per Document | 19 | 0.33* | 0.01 |

As shown in Table 4, there was a positive and significant relationship between the attention rate to midwifery journals indexed in the Scopus database and four qualitative metrics (P value<0.05). This relationship was stronger for SJR (R=0.53), then for CiteScore (R=0.47), and finally, for the mean of citations (R=0.33), and SNIP (R=0.29). In other words, altmetrics attentions had a more impact on SJR.

In the next step, regression analysis of altmetrics activity impact factor, including altmetrics attention and altmetrics coverage, on four qualitative metrics used to indicate the intensity of the relationship (Table 5).

Table 5
*The regression analysis of altmetrics activity on four qualitative metrics*

| | $R^2$ | β | T | P |
|---|---|---|---|---|
| Altmetrics coverage and SJR | 0.47 | 0.68** | 3.98 | 0.001 |
| Altmetrics coverage and SNIP | 0.30 | 0.54* | 2.78 | 0.01 |
| Altmetrics coverage and CiteScore | 0.44 | 0.66** | 3.76 | 0.001 |
| Altmetrics coverage and the Mean of Citations Received per Document | 0.29 | 0.55* | 2.76 | 0.01 |
| Altmetrics attentions and SJR | 0.18 | 0.42* | 1.92 | 0.03 |
| Altmetrics attentions and SNIP | 0.06 | 0.24 | 1.01 | 0.09 |
| Altmetrics attentions and CiteScore | 0.15 | 0.39* | 1.75 | 0.02 |
| Altmetrics attentions and the Mean of Citations Received per Document | 0.07 | 0.26 | 1.12 | 0.07 |

According to Table 5, the regression analysis indicated that altmetrics attentions and altmetrics coverage had an acceptable potential to predict the behavior of qualitative metrics of the midwifery and maternity journals, including SJR, CiteScore, SNIP, and mean of citations (P value<0.05).

## Discussion

Studying the midwifery and maternity journal articles indexed in the Scopus database in 2018 indicates that among all the articles published in these journals, 11% had not a DOI or PMID. So, we couldn't study them using Altmetrics Bookmarklet. These articles exclusively belong to the six journals: Breastfeeding Review, HAYAT, Practising Midwife, Contemporary Ob/Gyn, Matronas Profession, and AIMS Journal. The audiences have paid attention to half of the articles (49%) with DOI or PMID on social media. Erfanmanesh (2018) believed that this relates to the limited use of social media by scholars. Some reasons may have intensified this issue. One reason could be connected with the disability of midwifery scholars to create a scientific profile on social media. Another might be the lack of scholars' understanding of the knowledge translation on social media. It means that scholars in the field should express sophisticated scientific terms in a manner that the public can grasp. Besides, the midwifery and maternity journals should pay enough attention to assign DOI or PMID to their articles. To our knowledge, each altmetrics tool, like Altmetrics Bookmarklet, exclusively covers the specific parts of the web (Costas, Zahedi & Wouters, 2015; Erfanmanesh, 2018). So we should remember this limitation and judge fairly about these tools.

Investigating the different social media indicates Mendeley, Twitter, Dimensions, Facebook, News Outlet, Blogs, Policy Source, Google Plus, Wikipedia, Video Uploader, CiteULike, Highlight Research Platform, Reddit, and Paper Review Site are the hosts of the midwifery and maternity journal articles. Mendeley and Twitter ranked as the most prominent social media platforms for midwifery and maternity journal articles. This significance was mentioned in previous studies (Li, Thelwall & Giustini, 2012; Haustein et al, 2014; Hammarfelt, 2014; Robinson-García, Torres-Salinas, Zahedi & Costas, 2014; Costas et al., 2015; Barthel, Tönnies, Köhncke, Siehndel & Balke, 2015; Kolahi & Khazaei, 2016; Nuredini & Peters, 2016; Erfanmanesh, 2018; Azer & Azer, 2019; Dixon & Baker, 2020). The reason might be related to the reputation and credibility of these two social media platforms.

The presence of the midwifery and maternity journals on social media revealed that the highest rank of altmetrics coverage belongs to *Midwifery* with 97.14%, then *Women and Birth Journal of Neonatal Nursing* with 87.72%, and finally *Sexual and Reproductive Healthcare* with 82.11%. Generally, the altmetrics coverage of the studied journals was 48.97%, indicating less than half of the journal articles in midwifery and maternity were presented on social media. The vast proportion belonged to Q1 and Q2 journals. The mean altmetrics score of the journal articles was 14.07. The results showed that the highest rank of altmetrics attention belongs to *Breastfeeding Medicine* with 29.29%, the *Journal of Perinatal and Neonatal Nursing* with 17.32%, and *Geburtshilfe und Frauenheilkunde* with 17.16% accordingly. According to the results, the midwifery and maternity journals indexed in the Scopus database have favorable altmetrics coverage compared to other fields (Rowlands, Nicholas, Russell, Canty & Watkinson, 2011; Nuredini & Peters, 2016; Vainio & Holmberg, 2017). It could be related to the short half-cited life of the midwifery and maternity journals (Bar-Ilan, Haustein, Peters, Priem, Shema & Terliesner (2012); Bar-Ilan et al, 2013; Mohammadi & Thelwall, 2014; Erfanmanesh, 2018). In other words, we can conclude that scholars in medicine and related fields, such as midwifery, have a strong desire to share their findings on social media. Social media has an incredible potential to announce the scientific outputs to the public as principal stakeholders.

The results indicated a positive and significant relationship between the altmetrics coverage

and altmetrics attention of midwifery journals indexed in the Scopus database and four qualitative metrics; SJR, CiteScore SNIP, and the mean of citations received per document. On the one hand, it can be said that if the midwifery and maternity journals indexed in the Scopus database had higher qualitative metrics, then their presence on social media was better. On the other hand, it can be concluded that if the presence of the midwifery journals on social media is more and more, then their qualitative metrics in the Scopus will be improved. Social media could introduce and communicate scientific collaboration among scholars as well as manage scientific production. It can be deduced that publishing scientific articles on the social web could increase the visibility of the documents among the public; this phenomenon is called *social impact*. If this happens, then the number of citations received by the scholars, or what we named a professional impact, will increase. This leads to the improvement of the qualitative metrics of journals. Studying the midwifery and maternity journals revealed the reciprocal relation between the altmetrics measurements and the qualitative metrics of the midwifery journals. Previously, some other studies have verified the significant relationship between these two variables (Eysenbach, 2011; Li et al., 2012; Haustein, Bowman, Holmberg, Peters & Larivière, 2014; Costas et al., 2015; Sotudeh et al. 2015; Xia et al., 2016; Peoples et al., 2016; Esmaeilpour-Bandboni, Batooli, Ramezani, Ranjbar Pirmousa & Ramezani-Pakpour-langeroudi, 2016; Ebrahimy et al. 2016; Erfanmanesh, 2017; Syamili & Rekha, 2017; Erfanmanesh, 2018; Thelwall & Nevill, 2018; Maggio et al., 2018; Ravikumar & Khonglam, 2018, Barakat et al., 2018).

## Conclusion

Altmetrics is an emerging measurement method that could be considered a new mechanism for evaluating the scientific outputs on social media. These indicators are considered an alternative metric for measuring the intentions towards scholarly content alongside the traditional metrics (Barthel et al., 2015). Scholars in midwifery and maternity should try to share their findings on social media. Altmetrics indicators lead to the results in a short time. But we should remember that altmetrics studies are in the beginning stage of their development. According to the Midwifery and maternity journal articles, papers published in higher quality journals are more likely to be shared on social media platforms and get more altmetrics attention.

Publishing the scientific outputs on the social web has resulted in more visibility of the documents. This could help the articles to receive more citations in the scientific database by the scholars. As a result, the ranking of the journals will be improved based on the qualitative metrics of the scientific journal ranking system. So it could be suggested that the Midwifery and Maternity journals share their contents on different social media to improve visibility. Besides, it could be proposed that the Midwifery and Maternity journals' policymakers pay more attention to assigning DOI for the articles published in their journals. It leads to more visibility of the articles on social media. Then, as mentioned before, it could affect the journals' qualitative metrics in science citation databases.

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