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# The Scientific Productivity and Academic Output of Elite Iraqi Pediatricians: H-Index Reliability Indicators

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## 1. Abstract

**Background:** The scientific productivity and academic output of elite Iraqi pediatricians as measured by bibliometric parameters has become of increased interest. The aim of this study is to evaluate the scientific productivity and academic output of Iraqi pediatricians who have H-index of 10 or higher.

**Materials and methods:** The first step of this research was to determine the Iraqi pediatricians who have H-index of 10 or more at Google Scholar Citation by examining more than 300 profiles of Iraqi authors on the 16th and 17th of August, 2019. The second step was to study the H-index and scientific productivity and academic output of the authors found at other web sites such as the Scopus and Publons.

**Results:** Initially, three Iraqi pediatricians were found to have H-index of 10 at Google Scholar Citation and no Iraqi pediatrician having H-index of more than 10 was found. However, one of the Iraqi pediatricians "Mahmood Dhahir Al-Mendalawi" received citations for articles not authored by him and his profile contained articles not authored by him. His actual H-index was definitely less than 10 and his Scopus H-index was 3. Therefore, only 2 Iraqi pediatricians who actually have H-index of 10 were found. Aamir Al-Mosawi who also has H-index at Scopus of 8 and at Publons of 6 and Mazin Faisal Al-Jadiry who has H-index at Scopus of 6, but has no profile or H-index at Publons.

**Conclusion:** This is the very first study evaluating the scientific productivity and academic output of elite Iraqi pediatricians. When evaluating the H-index of an author at Google Scholar Citation, it is necessary to check the main articles contributing to the H-index of the author are actually belongs to him or her. A very low Scopus H-index is a good indicator to check the accuracy of citation calculation at Google Scholar Citation.

**2. Keywords:** H-index; Pediatrics; Publication; Iraq; Scopus; Reliability indictors

## 3. Introduction

The H-index is an academic tool that has been increasingly used by universities and other scientific and academic institutions to assess the productivity and citation-based impact of the published work of an author (Scientist, a researcher or a faculty member) simultaneously and representing them by a single number. The use of H-index was probably first suggested in 2005 by a physicist Jorge E. Hirsch to measure simultaneously the quantity and quality of

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scientific output [1,2].

Hirsch thought that the productivity of an author (The total number of published papers) does not account for the quality of scientific publications. On the other hand, citation-based impact of an author (The total number of citations) can be excessively affected by authoring a highly influential paper(s) that generate a large number of citations. Citation-based impact of an author can also be generated by many publications with few citations each. It has been thought that combing productivity and citation-based index into a single measurement reduces the artificial influence of one or two highly cited paper(s) on the citation count [1,2].

Therefore, the H-index has become the most widely used quantitative measure of impact and universities and academic institutions are increasingly being asked to show the quality and impact of their work [3,4].

The h-index is based on the scientist's most cited papers and the number of citations that they have received in other publications. The H-index for an author can be determined by knowing the number of articles written by the author indexed in citation databases such as Scopus and web of science. An H-index will be 10 if 10 articles have received at least 10 citations [1,2].

Therefore, it has been suggested that the H-index assesses the number of publications and the number of citations per publication and improves depending on the total number of citations or publications [1,2].

The scientific productivity and academic output of elite Iraqi pediatricians as measured by bibliometric parameters has become of increased interest. The aim of this study is to evaluate the scientific productivity and academic output of Iraqi pediatricians who have H-index of 10 or higher.

## 4. Materials and Methods

The first step of this research was to determine the Iraqi pediatricians who have H-index of 10 or more at Google Scholar Citation by examining more than 300 profiles of Iraqi authors where examined on the 16th and 17th of August, 2019. The second step was to study the H-index and scientific productivity and academic output of the authors found at their web sites such as the Scopus and Publons.

## 5. Results

Initially, three Iraqi pediatricians with current affiliation to institutions in Iraq were found to have H-index of 10 at Google Scholar Citation and no Iraqi pediatrician having H-index of more than 10 was found. However, one of the Iraqi pediatricians "Mahmood Dhahir Al-Mendalawi" received citations for articles not authored by him and his profile contained articles not authored by him [5]. His actual H-index was definitely less than 10 and his Scopus H-index was 3 [6]. Therefore, only 2 Iraqi pediatricians who actually have H-index of 10 were found [7,8]. Aamir Al-Mosawi who also has H-index at Scopus of 8 [9] and at Publons of 6 [10] and Mazin Faisal Al-Jadiry who who has H-index at Scopus of 6 [11], he has no profile or H-index at Publons.

An article (PMID:18521464) entitled "Antibiotic resistance pattern and empirical therapy for urinary tract infections in children" authored by "Al-Harthi AA, Al-Fifi SH" (Saudi Med J. 2008; 29: 854-858.) received 28 citations and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. He published a comment on the article having the same title in the same journal (Saudi Med J. 2008; 29: 1520). The commentary of "Mahmood Dhahir Al-Mendalawi" received only 5 citations, but in the profile of "Mahmood Dhahir Al-Mendalawi", it received 33 citations which are the citations of the original article and the commentary (28+5).

An article entitled "Nutritional knowledge of primary health care physicians in Jeddah, Saudi Arabia" authored by "Abdulla M Al Zahrani and Rajja M Al Raddadi" (Saudi Med J. 2009; 30: 284-287) received 19 citation and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not

one of the authors of the paper. He published a correspondence (Letter) having the same title in the same journal (Saudi Med J. 2009; 30: 284-287). The paper of "Mahmood Dhahir Al-Mendalawi" didn't receive any citation but it received the 19 citations of the article of "Abdulla M Al Zahrani and Rajja M Al Raddadi".

An article entitled "Prevalence of celiac disease in children with Down syndrome screened by anti-tissue transglutaminase antibodies" authored by "Omar I. Saadah, Jumana Y. Al-Aama, Meshari A. Alaifan, Yagoub Y. Bin Talib, Jamil A. Al-Mughales" (Saudi Med J. 2012; 33: 208-210) received 10 citations and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. He published a correspondence (Letter to the editor) having the same title in the same journal (Saudi Med J. 2012; 33: 915-916). The letter of "Mahmood Dhahir Al-Mendalawi"didn't receive any actual citation, but , but on Google Scholar citation it appeared as having 10 citations.

An article (PMID: 23904919, PMCID: 3725250) entitled "Prevalence of Celiac Disease in Omani Children with Type 1 Diabetes Mellitus: A Cross Sectional Study" authored by "Siham Al-Sinani, Sharef Waadallah Sharef, Saif Al-Yaarubi, Ibrahim Al-Zakwani, Khalid Al-Naamani, Aisha Al-Hajri and Said Al-Hasani" (Oman Med J. 2013; 28: 260-263) received 10 citations and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. He published a letter to the editor having the same title in the same journal (Oman Medical J. 2013; 28: 375). The letter of "Mahmood Dhahir Al-Mendalawi" received 2 citation, but on Google Scholar citation it appeared as having 11 citations.

An article (PMID:24715939, PMCID: 3976720) entitled "Demographic and Clinical Characteristics of Type 1 Diabetes Mellitus in Omani Children-Single Center Experience" authored by "Saif Al-Yaarubi, Irfan Ullah, Sharef Waadallah Sharef, Azza Al Shidhani, Shaima Al Hanai, Rabaa Al Kalbani and Shamsa Al Jamoodi" (Oman Med J. 2014; 29: 119-122) received 11 citations and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. He published a letter to the editor having the same title in the same journal (Oman Med J. 2014; 29: 243). The letter of "Mahmood Dhahir Al-Mendalawi" didn't receive any citation, but on Google Scholar citation it appeared as having 11 citations which is actually received by the original article and not by his letter.

An article (PMID: 27052287, PMCID: 4852022) entitled "The association between body mass index and duration spent on electronic devices in children and adolescents in Western Saudi Arabia" authored by "Abdulmoein E. Al-Agha, F. Sarah Nizar" and Anwar M. Nahhas" (Saudi Med J. 2016; 37: 436-439) received 16 citations and was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. He published a letter to the editor having the same title in the same journal (Saudi Med J. 2016; 37: 913-914). The letter of "Mahmood Dhahir Al-Mendalawi" received only one actual citation, but on Google Scholar citation it appeared as having 16 citations which is actually received by the original article and not by his letter.

An article (PMID:26997215, PMCID:4817292) entitled "Impact of Pediatric Inflammatory Bowel Disease on Linear Growth: Data from a National Cohort Study in Saudi Arabia" authored by "Mohammad I. El Mouzan, Mohammad A. Al Mofarreh, Omar I. Saadah, Abdulrahman A. Al-Hussaini, Khalid A. Al-Saleem and Ali I. Al Mehaidib" (Saudi J Gastroenterol. 2016; 22: 106-108.), was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. The article received 10 citations.

An article (PMID: 27320952, PMCID: 4970341) entitled "Prevalence of burnout and its correlates among residents in a tertiary medical center in Kerala, India: A cross-sectional study" authored by B

Ratnakaran, A Prabhakaran and V Karunakaran (J Postgrad Med. 2016; 62: 157-161), was included in the profile of "Mahmood Dhahir Al-Mendalawi" despite he was not one of the authors of the paper. The article received 29 citations.

Mazin Faisal Al-Jadiry was the author number 12 in one of the papers contributed to his h-index of 10, the paper entitled "Evaluating Palliative Care Needs in Middle Eastern Countries" published by "Michael Silbermann et al." (Journal of Palliative Medicine. 2015; 18: 18-25). The paper received 19 citations.

## 6. Discussion

Emphasis has been made that the author's H-index can be used appropriately only for comparing authors working in the same field because citation customs and practices differ widely among different fields. The H-index cannot be used accurately to for comparison between authors across different medical specialties [1,2,12,13].

Currently, the citation indices are indexing mostly journal article and some conference proceedings and generally the don't count citations in books and therefore when comparing the scientific productivity and academic output of authors, it seems necessary to consider the authorship of books and book chapters.

Mazin Faisal Al-Jadiry was the author number 12 in one of the papers contributed to his h-index of 10, the paper entitled "Evaluating Palliative Care Needs in Middle Eastern Countries" published by "Michael Silbermann et al" (Journal of Palliative Medicine. 2015; 18: 18-25). The paper received 19 citations.

The H-index discards the information contained in author placement in the authors' list, which in some scientific fields is significant [14,15].

In his original paper, Hirsch suggested partitioning citations among co-authors to solve the problem of adding many authors who didn't contribute sufficiently to the production of the published article [1].

Calculating weighted citations based on author rank has also been suggested [15].

## 7. Conclusion

This is the very first study evaluating the scientific productivity and academic output of elite Iraqi pediatricians. When evaluating the H-index of an author at Google Scholar Citation, it is necessary to check the main articles contributing to the H-index of the author are actually belongs to him or her. A very low Scopus H-index is a good indicator to check the accuracy of citation calculation at Google Scholar Citation.

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