

**A SCIENTOMETRIC REVIEW OF ARTICLES PUBLISHED IN
THE JOURNAL APHASIOLOGY IN THE YEAR 2019**

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**A Dissertation Submitted in Part Fulfillment of
Degree of Master of Science (Speech-Language Pathology)
University of Mysore
Mysuru**



**ALL INDIA INSTITUTE OF SPEECH AND HEARING
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AUGUST 2022

CERTIFICATE

This is to certify that this dissertation entitled "**A scientometric review of articles published in the journal aphasiology in the year 2019**" is a bonafide work submitted in part fulfilment for the degree of Master of Science (Speech-Language Pathology) of the student Registration Number: 20SLP018. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for an award of any other Diploma or Degree.

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CERTIFICATE

This is to certify that this dissertation entitled "**A scientometric review of articles published in the journal aphasiology in the year 2019**" has been prepared under my supervision and guidance. It is also being certified that this dissertation has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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DECLARATION

This is to certify that this dissertation entitled — "**A scientometric review of articles published in the journal aphasiology in the year 2019**" is the result of my own study under the guidance of Dr.S.P. Goswami, Professor, Speech Pathology, and Head of Speech-Language Pathology, All India Institute of Speech and Hearing, Manasagangothri, Mysuru-570006 and has not been submitted earlier to any other University for an award of any other Diploma or Degree.

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Dedicated to
Achan,
Amma
And Ramu

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CHAPTER I

INTRODUCTION

The research output in each area has rapidly expanded, so the requirement to evaluate an article's quality has become very important in this century. Scientometrics is an area of the "Science of Science." This concept was described by Nalimov and Mulchenko (1969) as "a sub-field which uses quantitative methods to the study of science as an information process." According to Haitun (1983), "Scientometrics" is a "scientific discipline" that performs repeatable assessments of scientific activity and demonstrates its objective quantitative regularities.

Scientometrics, according to Tague-Sutcliffe (1992), is the study of the quantitative aspects of science as a field or as an economic activity. It is relevant to the development of science policy and was a component of the sociology of science. It incorporates quantitative analyses of scientific activity, including publication among others, and so has some similarities to bibliometrics. Scientometrics is a category of measurement techniques used to examine the emergence of underlying trends in and linkages between many branches of science (Nalimov and Mulchenko, 1969). The ability of scientometrics to classify disciplinary boundaries is one of its key strengths (Fortunato et al., 2018).

Numerous researchers have used scientometric analysis over the years to determine the growth of research in a particular field or have subjected journals to this type of analysis to determine author collaboration, year-wise productivity, country-wise productivity, and authors' contributions to particular fields. Analyzing the scientific output of journals is the most common type of study under the bibliometrics/scientometrics. Scientometrics examines scientific execution using statistical methods

based on publications of a journal. It is one of the quantitative methods for examining the articles that have been published in a particular journal.

Sadik & Chaturbhuj (2019) analysed scholarly communication on phonology from 2000 to 2017 from a variety of sources, including articles, book reviews, proceeding papers, book chapters, letters, and reprints. The collaborative index, relative growth rate, collaboration co-efficient, and degree of collaboration were taken into consideration when analysing the outcome parameters using a statistical tool. They observed that publications with a single authored were more than those with multiple authors. They also found that there was less collaboration in the field of phonology with a low collaborative index. They also observed that the USA had the highest percentage of publications in the area of phonology.

Gupta et al. (2018) investigated at 493 global dysgraphia research papers that have been indexed in the Scopus database throughout the previous ten years, from 2007 to 2016.

These publications experienced an average yearly growth rate of 4.02 percent, with an average citation impact per paper of 7.90. These articles experienced an average yearly growth rate of 4.02 percent, and the average number of citations per paper was 7.90. The top 10 most productive countries out of the 64 that took part in the dysgraphia global research each contributed a global share ranging from 3.04 percent to 20.69 percent. The USA contributed the largest global publication share at 20.69 percent, followed by Italy, U.K. and Japan. Between 2007 and 2016, the top 10 most productive countries' combined global publication share accounted for 81.34 percent of all publications worldwide and 96.74 percent of all citations. The relative citation indexes for Canada, the United States, the United Kingdom, and Israel were all higher

than the world average of 1.19 between 2007 and 2016. In research on dysgraphia from 2007 to 2016, the proportion of worldwide collaborative publications from the top 10 most productive countries ranged from 7.32 to 39.13 percent. In terms of subjects, medicine contributed the most publications to dysgraphia research, followed by neurosciences, psychology, etc. between 2007 and 2016.

Ramkumar et al. (2016) studied at the trend toward collaboration in three specific journals of speech, language, and hearing sciences. Journal of Speech, Language and Hearing Research (JSLRH), published by the American Speech and Hearing Association (ASHA), Asia Pacific Journal of Speech, Language and Hearing (SLH), and Journal of the All India Institute of Speech and Hearing (JAIISH) were the top three journals that considered by the authors. The authors had taken the time period between 2009 to 2013 for review the articles. They employed scientometric tools including the Modified Collaborative Coefficient, Collaborative Index, and Degree of Collaboration. As an additional parameter for analysis, they had included the Local Collaborative Index, Domestic Collaborative Index, and International Collaborative Index. The authors conducted analysis of Journal-wise, subject-wise, and authorship patterns. They observed that between 2009 to 2013, the number of papers published in the journals increased. According to the high collaborative index, this indicated that the majority of the articles were collaborative in nature. They observed that between 2009 to 2013, the number of papers published in the journals increased. The high collaborative index indicated that the majority of the articles were collaborative in nature. It was observed that the number of articles published in language was more than Speech and Hearing subjects in the subject-by-subject analysis. The authors also observed that local collaborations were more frequent than national and international collaborations.

Need of the study

A comprehensive understanding of what is happening in a specific area of study is crucial. Additionally, it helps researchers to identify areas that are still requiring research or research gaps. In order to understand whether a specific approach is more frequently used and has a lot of evidence-based practice. Further, this study would help in understanding the position at which our Indian research is heading. It will also make it easier to understand the author's collaborative patterns. The research of this study will also reveal who the researchers are, including their qualifications such as surgeons, physicians, speech-language pathologists, audiologists, and others.

Under the current pandemic situation, it is difficult to take on research projects that need the author to move around, interact with people, gather data, and analyse it. Consider scientometric analysis, systematic reviews, or one-on-one contact-based research as alternatives. The study's findings will help researchers in the field of aphasia and disorders, discover research gaps and choose areas of relevance and interest. When there has been little or no research, future researchers, students, or authors can choose topics based on research gaps. However, since there are no studies in the field of aphasia, the current study will help us to comprehend the most recent trends in this field.

Aim of the Study

The study aims to quantify articles' quality based on different parameters (such as the number of publications, distribution of publications, funding and citation). It also aims to determine the country-wise and author-wise productivity of articles.

Objectives

- 1) To quantify the topic-wise distribution of publication of articles in the journal Aphasiology in the year 2019.
- 2) To examine the nature of the authorship pattern of the articles in the journal Aphasiology in the year 2019.
- 3) To identify the collaboration patterns in the journal Aphasiology in the year 2019.
- 4) To recognize the Country-wise distribution of articles in the journal Aphasiology in the year 2019.
- 5) To identify the funding agencies in the journal Aphasiology in the year 2019.

CHAPTER II

REVIEW OF LITERATURE

The review of literature focuses on the research carried out in scientometry in the field of Speech Language and Hearing. It includes studies conducted in the field of phonology, Autism, Voice, Audiology, Dementia.

Scientometric study in Autism

Using bibliometric markers, Lorenzo et al.(2016) studied the evolution of the Asperger's syndrome participants from 1990 to 2014. To compile their research, they used Current Contents Connect, Web of Science, Medline, Inspec, Biosis Citation Index, and SciELO Citation Index. There were a total of 3452 scientific articles on that subject.

They reported that the amount of study on this topic has been steadily rising. In both the period from 2003 to 2014 and between 1990 and 2001, the number of articles increased. However, there was a decline in scientific output in 2002. The authors reported that 574 current journals published papers on this subject, with the Journal of Autism and Developmental Disorders accounting for 17.14% of the total. The average number of pages for an article in the Journal were ten. Two, three, four, or five author publications accounted for 65% of the data collected. Additionally, 126 articles with ten or more authors were found. The number of citations for the publications ranged from 0 to 1083. After 1990, the number of citations has gradually increased. The most prolific author was Baron Cohen, who published 143 papers. There were 708 to 1083 citations for three papers. Asperger theme subject was primarily published under the area of Psychology and Behavioural Sciences with 2730 papers. The authors found that the United States and England were the two most productive nations in this area across

the globe. They came to the conclusion that psychological research, rather than education and pedagogical intervention, is the foundation of the majority of studies in this field.

Due to the size of the sample size employed, which prevented from exploring methodological facets of the intervention in depth, the review given here has limitations. Despite the considerable knowledge about the state of the art provided, the treatment should unquestionably be done with a smaller sample. Looking on to the strength of the study, it provides an idea about the upward evolution during the last eight years in the scientific production about Asperger's syndrome. The study also highlights the bibliometric indicators from the social science areas, which need to be enlarged.

Scientometric study in dyslexia

In the area of dyslexia Janaarathan et al., 2020 studied Mapping of Research Output on Dyslexia: A Scientometric Study during 2015-2019. There are 1677 research papers that were submitted by 7623 authors during the years of 2015 and 2019. Single authors provided 134 papers, and triple authors contributed 314 papers. 12 research papers were given by the author Tzipi Horowitz-Kraus, the average relative growth rate and doubling time are 0.027 and 13.227, respectively. Nationwide, the United States has contributed 398 research papers on dyslexia, which ranks first, while India has contributed 13 research papers, which ranks twentieth. On research on dyslexia, English was determined to be the preferred language of 1639 authors (97.73 percent). The journal "Dyslexia" (Chichester, England) has provided 134 (7.99%) research publications that rank first. The Netherlands' Behavioral Science Institute has produced 15 research publications, placing it in first place among the most contributing

institutions. According to the Subramaniam formula, the average degree of collaboration is 0.920. Reveals that collaborative writers account for 92% of contributions. Given that India's prevalence of dyslexia is surprisingly low, it is imperative to raise awareness among the general public. The funding organisations and the Indian government should take the lead in motivating the scholars to submit more research articles on dyslexia. To increase their understanding of dyslexia, the researchers ought to cooperate with experts from various nations.

Scientometric studies in Dementia

In the scientometric review done on Cognitive research and Dementia by Pestana et.al (2019), the intellectual structure, developing patterns, and relevant alterations in the growth of available knowledge were examined. Data from the Web-of-Science between 1998 and 2017 revealed an expanded network of 564 articles and 12,504 citations.

Using Cite Space, a scientometric analysis of the co-citation network was carried out. The results show that Stern (2018) had the most publications and citations. In the network of journals, institutions, and nations, neurology, Harvard University, and the United States were found to be in first, second, and third place, respectively. Research on functional ability, executive control, mortality data, and reserve mechanisms has increased significantly, while cognitive reserve is still the area of this profession that has received the most interest. The identification of significant articles and the formation of emerging trends reveals new insights in the field of research, allowing for better communication of major discoveries and data exploration.

The study has extensively reviewed the literature on Cognitive research and dementia from WoS databases providing an outline of the evolutionary trajectory of the collective knowledge over the past two decades and has revealed the areas of active pursuit and future research. This study reveals the emerging trends and patterns of publications, citations, journals, institutions, and areas of research in the literature, using Cite Space and VosViewer. The paper identifies the top research clusters in the study of Cognitive Rehabilitation and Dementia. Knowledge of these clusters and the information they provide are foundational to the field of research. This study, which adds a new dimension to the analysis by providing insights into the flow of major trends and collaborations. According to the authors, this is the first study to use Cite Space to explore and visualise knowledge about CR and dementia. It is also one of the rare studies that has concentrated on co-citations as a sign of how this field has developed from several directions.

The study used multiple metrics, which helps researchers investigate the relationships between articles and citations. Another significant contribution made by this research paper is the overview of the way in which knowledge is structured in the field of Cognitive research and dementia.

The paper was restricted to English language journals hence, the literature that has been published in other languages, if present, is not considered. Despite the relevance of the WoS databases to CR and dementia research, other important studies could have been included from other databases. Hence, using more databases may help strengthen the findings of the study.

Asghar, Cang, and Yu (2018) studied the recent research activities on Assistive Technologies (AT) for people with Dementia. For this study, articles from 2000 to

2014 were considered. The data was collected from Scopus and Citation databases. The authors collected a total of 1902 publications and subjected them to bibliometric/scientometric analysis. It was observed that, an overall increase in the research output on AT-related research with an average annual growth of 29%. USA took the first rank with 503 publications, 9 followed by the UK with 399 publications in country-wise productivity. Even in collaborative research publications, the USA took the first rank, followed by the UK. To check for the quality of publications, the authors used several parameters like the average number of citations (C), P-Index which gives a balance between the quantity and quality of the publications where quantity is calculated by citations (C) and quality by the ratio of C/P, P is the total number of publications and H-index, an author-metric which indicates the productivity and the number of citations per article. The USA had the highest P-Index with 44.73 and a good C value of 13.34. It was noted that Germany, even with fewer publications, had the best C value of 16.43 and a high PIndex value of 30.09 because Germany published their articles in high-impact journals. They also observed that different countries have different focuses on the topics related to AT research. USA focuses on digital cities for the elderly. In contrast, the UK focuses on telecare, Germany focuses on assistance through activity monitoring, and Human-like communication assistive robots for emotional well-being in Australia. The authors also reported that countries like the USA, UK, and France have well-established national policies for Dementia. In this study also observed that eastern countries of the Asia Pacific had lesser output in this field, and these countries need to put more effort, as concluded by the authors.

Scientometric studies in Phonology

In the area of phonology, Batcha and Chaturbhuji (2019) investigated collaboration and authorship trends. For this study articles from 2000 to 2017(18 years) were included and resorted to data collection through Web of Science (WoS). The data included 5015 records in all. The authors used scientometric measures such as the Collaboration Index, the Degree of Collaboration, and other metrics. Modified collaborative coefficients, collaborative coefficients, collaborative coefficients, collaborative coefficients, collaborative coefficients, collaborative Rate of relative growth, and doubling time, as well as analysing the data obtained.

The authors found that scientific publications had the most entries, with 4019, followed by book reviews and paper proceedings, which had 397 and 214 records, respectively. It was observed that 5.82 percent rise in research production from 2000 to 2017. Single writers authored 41.81 percent (2097) and two authors authored 23.39 percent (1173) of the articles, respectively. With a score of 2.70, the year 2012 had the highest collaboration index. The average degree of collaboration was 0.57, according to the researchers. It was observed that, the year 2013 had the highest level of teamwork with a score of 0.63. The modified collaboration coefficient was similar to the average collaboration coefficient (0.36 and 0.37, respectively). Between the years 2000-2017, the average relative growth was 0.07, and the average doubling time was 0.044. Usha Goswami was the highest-ranking author, with 34 records, followed by Iris Berent, who had 33 records. *Lingua* had the most articles in the area of phonology, with 192, followed by *Clinical Linguistics and Phonetics*, which had 111. They also observed

that the United States was the country with the number of articles published (1928), followed by the United Kingdom with 1302 articles published.

They came to the conclusion that single-author articles were more common in the subject of phonology. As a result, the collaboration coefficient was less than 0.5, and the modified collaborative coefficient was 0.37.

Scientometric studies in the field of Speech and Hearing sciences

Ramkumar (2022) studied Master's Dissertations to find Research interests in Speech, Language, and Hearing Sciences in India during 2011–2012 and 2016–2017. The objectives of the study include, provide an overview of the clinical disorders covered in Master's dissertations in Speech, Language, and Hearing Sciences in India between 2011 and 2012 and between 2016 and 2017. To provide an overview of the research interests in master's dissertations in India between 2011 and 2012 2016 and 2017 in terms of the domains and subdomains of speech, language, and hearing sciences.

This study included university departments and affiliated colleges that, in addition to RCI recognition and the two national institutes, were accredited by the NAAC. The study included the following eight institutes as follows: four university departments include - Manipal's School of Allied Health Sciences; Mangalore's Kasturba Medical College and Sri Ramachandra University in Chennai and Bharatiya Vidyapeeth in Pune; two affiliated colleges: SRCISH in Bangalore and NISH in Trivandrum; and the AIISH and AYJNISH national (Rephrase not clear) institutes. The data included 1111 master's dissertations from eight Indian institutions between the years of 2012 and 2017. Along with advocacy, the following domains were covered: Speech and its disorders, Language and its disorders, and Hearing and its disorders.

Phonology, articulation, fluency, and voice problems are the subcategories that fall under the category of Speech and its disorders. Under the heading "Language and its disorders," there were sub domains for both adult and paediatric language disorders. Diagnostic Audiology and rehabilitative Audiology were considered as subdivisions of Hearing and its problems.

They reported that, the pattern that developed in terms of the primary domains demonstrated that the dissertation topics in Hearing and its disorders (45.82%), Speech and its disorders (29.79%), and Language and its disorders (21.42%). When it comes to sub domains, students have shown a greater interest in diagnostic Audiology (33.06%) and voice disorders (14.75%), whereas others, including fluency and its disorders (4.11%) and adult language disorders (8.96%), have not caught enough attraction during the study period. In terms of clinical disorders the author found that the student research on clinical conditions related to rehabilitative audiology, including hearing aids and cochlear implants, balance and vestibular issues, sensorineural hearing loss, tinnitus, and hyperacusis, as well as research on stuttering, aphasia, and intellectual disability in Speech-Language Pathology, appears to be promising.

They concluded that more studies on topics with emphasis on rehabilitative aspects could be attempted.

To identify the collaboration tendencies in Speech, Language, and Hearing sciences, Ramkumar, Narayanasamy, and Nageswara (2016) looked at three specific journals from 2009 to 2013. The three journals used in this study were the American Speech and Hearing Association's (ASHA) Journal of Speech, Language, and Hearing Research (JSLHR), the Asia Pacific Journal of Speech, Language, and Hearing (SLH), and the Journal of All India Institute of Speech and Hearing (JAIISH).

A total of 905 documents were published, according to them. The Journal JSLHR had the most publications, with 648, followed by JAIISH with 146, and finally SLH with 111. Between the years 2009 to 2013, the number of publications in all journals increased. Among 320 papers, multi-authored papers were the most popular. Multi-authored publications were the trend in JSLHR, and three-authored papers were the most common in JAIISH and SLH. For (use some other word) all three journals, the degree of collaboration was greater than 93%. In all, 39.78 percent of publications were published in the Language domain, followed by 36.91 percent in the Speech domain, and 36.91 percent in the Hearing domain (21.44 percent). The three journals all followed the similar pattern. Local had 366 papers, Domestic had 344 papers, and International had 132 papers in terms of collaboration. Similar tendencies were detected in JAIISH and SLH, however in JSLHR; the biggest output was stated to be domestic collaboration, followed by local and international collaboration. They concluded by suggesting that, like other domains, collaborative trends can be seen in Speech, Language, and Hearing Sciences.

Scientometric study in the field of Audiology

Nandeeshha and Begum (2017) studied documents in the field of Audiology from 1989 to 2016 in the Web of Science (WoS) database. There were 1382 documents compiled by the authors in the field of audiology.

Scientific articles were the most common sort of document, accounting for 1180 (85%) of the total, followed by Conference proceedings, which accounted for 93 (7%) of the total. They observed a rise in the number of publications from five in 1989 to 144 in 2016. Citations increased from zero in 1989 to 1739 in 2016, according to the authors. De Wet Swanepoel (2017) ranked highest among the authors who published in

this field, with 20 publications, followed by an anonymous author with 18 publications. The University of Pretoria stood the first university, with 32 publications. The United States came out on top in terms of performance, with 507 (36.69 percent) papers produced. England, Germany, Australia, and Canada were among the top five most productive countries. The authors also said that the majority of the publications were published in English (1284), with German coming in second (79). Other languages used included Portuguese, Spanish, Turkish, French, and Polish. They also looked at production, and the International Journal of Audiology came out on top with 135 publications, followed by the Journal of The American Academy of Audiology with 99. Otorhinolaryngology is top in the list of audiology research areas, followed by Audiology and Speech-Language Pathology.

There are 815 and 410 publications in all. They also stated that the National Institute of Deafness and Other Communication Disorders (NIDCD NIH) was number 1 in terms of sponsoring 23 publications. This kind of research helps in appreciating the contributions made to the field of audiology research by specific authors, universities, languages, and topic areas. Additionally, it shows the direction which audiology research would go in the near future.

Scientometric study in Voice science

Pestana et al. (2019) used text mining, clustering, and scientometric techniques to investigate the trend of singing voice from 1949 to 2016. Authors collected information from the PubMed database and separated it into two periods: the first (1949-2010) and the second (2011-2016). In this field, there were a total of 754 papers published.

The authors observed that the number of articles published in this field rose from 1949 to 2016; the total number of publications found in the second period was 225. The authors also observed that the number of publications published increased steadily over each decade. They also stated that articles about the singing voice were published in 162 journals. It was also found that the Journal of Voice had the most articles published in both time periods. It was also observed that until 2010, the professional singer was the most explored topic, with an emphasis on opera singers. The focus changed from organic structure to functional features of the singing voice, with a focus on male vocalists.

The authors concluded by stating that singing voice research has progressed, the number of articles published in this subject has increased, and research into the functional elements of singing voice has become more important.

This article provides a summary of almost all of the research in the field that has been conducted in that period. The article also uses novel and innovative methods of reviewing existing research in the field, with the use of both bibliometric and scientometric approaches. The study provides an overview and a comparison of research trends existing within the field and reveals the evolution of topics studied within the field across the years.

In this study, the investigators limited their search to PubMed due to time restrictions hence, the likelihood and presence of a selection bias cannot be ruled out. Although publication count is a significant and one of the most widely used indicators, the fact remains that it only reveals the quantity and does not give any information regarding the quality of the publications. Inclusion of more search engines to cover other fields, could further strengthen the results.

CHAPTER III

METHOD

The current study is a scientometric review aimed to quantify articles' quality based on different parameters (such as the number of publications, growth rate, and distribution of publications). Additionally, an attempt is also made to determine the country-wise and author-wise productivity of a select journal. The method followed for the study is elaborated below.

3.1 Procedure

The study was carried out in three phases; these include

- 1) Identification of the Journal and selection of time period for review.
- 2) Retrieval of the documents published in the Journal during the time period of interest.
- 3) Data collection i.e., collecting all the documents published during the year 2019 and analyzing them for scientometric properties.

3.1.1 Identification of the Journal and selection of time period for review

The journal chosen for the review of this investigation was aphasiology. The field of aphasiology deals with every aspect of language impairment, disability, and related issues caused on by brain injury. It offers a platform for discussion on all facets of aphasia and related topics from various disciplinary viewpoints, as well as for the dissemination of cutting-edge knowledge. Aphasiology publishes articles on the clinical, psychological, linguistic, social, and neurological aspects of Aphasia and includes readers from the fields of neurology, neuropsychology, neurolinguistics, and

speech and language pathology. Studies using a variety of empirical techniques, such as experimental, clinical, and single case studies, surveys, and physical investigations are published in addition to regular articles that include significant reviews, clinical fora, case studies, and book reviews. The Journal publishes one volume (of publications) annually, comprising 12 issues with each issue containing 5-8 research articles. All documents published in the Journal are in the English language. As of 2022, the Journal *Aphasiology* has published a total of 36 volumes. In the current study, articles and research documents published in the year 2019, (Volume33) were considered for scientometric review (*Aphasiology Aims & Scope*, n.d.)

3.1.2 Retrieval of the documents published in the Journal during the time period of interest.

The databases under the E-Journal service provided by the Library and Information Center of the All India Institute of Speech and Hearing (AIISH), Mysore, were used to obtain and review journal articles.

3.1.3 Data Collection

All articles and documents published in the year 2019, Volume 33, were individually reviewed. The articles were organized and tabulated issue wise. The articles were then systematically segregated and categorized based on the parameters using Microsoft Excel sheet.

Inclusion criteria -

The inclusion criteria about this study were as follows:

- (1) Articles in the Journal Aphasiology.
- (2) The publication time span from 1st January 2019 to 31, December 2019.

- (3) Data collection was only limited to the E-Journal facility provided by the Library and Information Centre of All India Institute of Speech and Hearing (AIISH), Mysore.

3.2 Analysis

The articles were analysed and segregated based on the following parameters;

- (a) The number of articles: The total number of articles (comprising review articles, research articles, reports, and editorials) in each issue of the Journal,
- (b) Document/Article type: Scientific articles (SA), Reviews [(RW), which contains systematic reviews, literature reviews, and book reviews], and reports were considered under this,
- (c) Topic-wise distribution of articles about Adult language disorders, particularly Aphasia, such as articles containing assessment, Speech Language pathologist management (articles containing outcomes of different therapy techniques, use of a therapy technique on different disorders, and direct/indirect therapy outcomes), combined (assessment and management) and others .
- (d) The type of participants: Persons with Aphasia (PWA), Primary Progressive Aphasia (PPA), Other disorders, Speech-Language pathologists s, allied health professionals or not applicable (review articles),
- (e) Age group of the participants [Not specified (articles with human participants whose age is not mentioned), Adults (18-55 years), and Geriatrics (>55 years)],
- (f) The names and number of authors (authorship pattern and author-wise productivity)
- (g) Collaboration from different institutes (Collaborative pattern): local collaboration (within the same institute or the same state/province), national

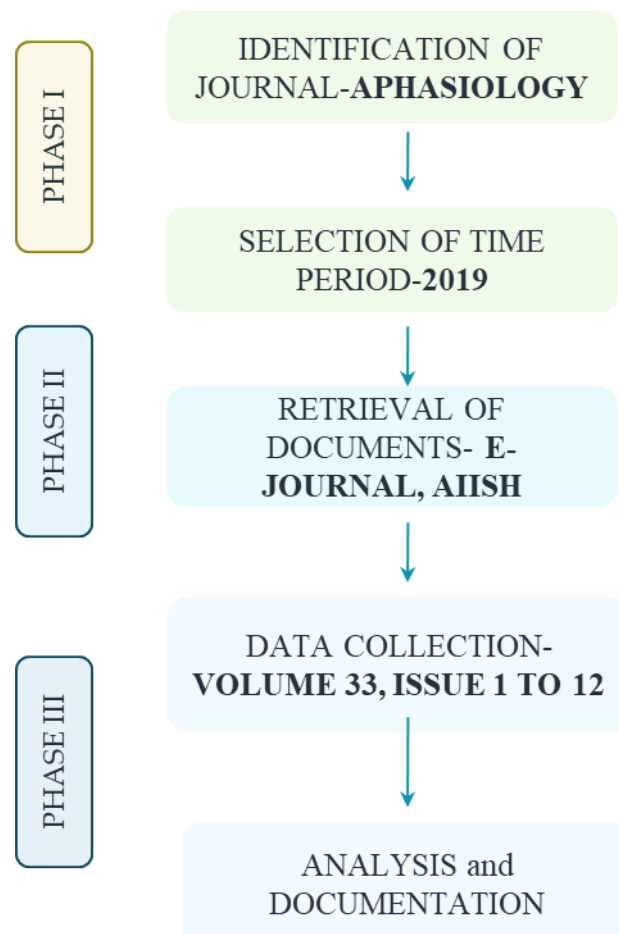
collaboration (between two or more states/provinces), and international collaboration (between two countries),

- (h) The country of the authors (Country-wise productivity),
- (i) The number of citations of the article (it was determined using the web search engine called Google Scholar),
- (j) Funding source for the research article (List of funding agencies and top three agencies were ranked based on the number of articles funded), and (l) Research trends in Aphasia (issue-wise analysis on the number of articles was done for each year).

The above parameters were analysed through scientometric tools.

Figure 3.1

Flowchart depicting the procedure



3.3 Scientometric tools

3.3.1 Collaboration Index (CI)

The average number of authors per joint paper is used to calculate the Collaboration Index (Savanur& Srikanth, 2010). Single-authored papers are always excluded from the collaboration index analysis. Therefore, for CI, the formula is $CI = (\text{Total author}) / (\text{Total joint paper})$. The statistical formula for Collaboration Index is,

$$CI = \frac{\sum_{j=1}^A jf_j}{N}$$

Where f_j is the number of j -authored papers, j is the number of authors, and N is the total number of research papers.

3.3.2 Degree of Collaboration (DC)

The ratio of collaborative research papers to the overall number of research publications in a discipline over a given period is known as the degree of collaboration (Subramanyam, 1983). The formula for Degree of Collaboration is,

$$DC = \frac{Nm}{Nm + Ns}$$

Where Nm is the number of multi-authored papers, and Ns is the number of single authored papers.

3.3.3 Collaborative Co-efficient (CC)

The collaboration co-efficient is a measure of research collaboration that takes into account both the average number of authors per publication and the percentage of multi-authored papers (Ajiferuke et al., 1988). The equation to calculate the CC is,

$$CC = 1 - \frac{\sum_{j=1}^A \left(\frac{1}{j}\right) f_j}{N}$$

Where f_j is the number of j -authored papers, j is the number of authors, and N is the total number of research papers.

3.4 Statistical analysis

The data pertaining to the articles were tabulated and analysed using SPSS software (version 20). Variables such as Topic-wise distribution of articles, the number of authors, the country from which the authors are collaboration from different institutes, the number of citations for the paper, and the research article's funding source were quantified in terms of frequency and percentage.

CHAPTER IV

RESULTS

The findings from the Journal of Aphasiology are discussed in this chapter. The Journal Aphasiology publishes twelve issues in a year. This study aims to quantify article quality based on different parameters (such as the number of publications, growth rate, and distribution of publications) published in the year 2019. Following were the objectives of the study and the details of the outcomes of these objectives are given below

4.1 The number of articles

The total number of articles obtained from the Journal aphasiology in the year 2019 was seventy-five (75).

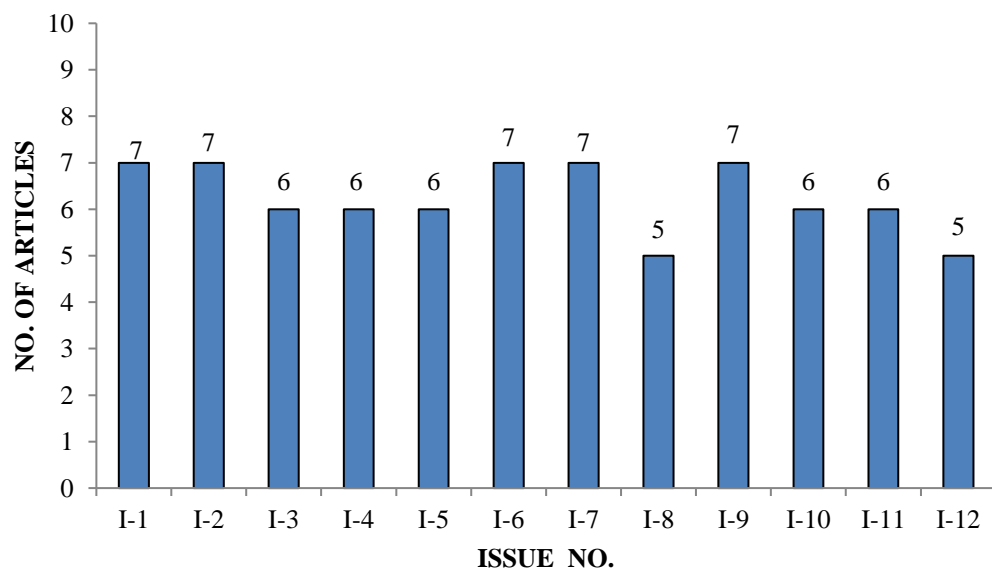
- Each issue contained 5- 7 articles on an average, out of these twelve issues, issue number 1,2,6,7 and 9 contains seven articles (9%)each.
- Issue number 8 and 12 has lowest number of articles which were limited to 5 (7%) in these two issues.

Table 4.1 and Figure4.1 depict the total number of articles published in every issue of the year 2019.

Table 4.1*Issue-wise distribution of the number of articles in 2019*

ISSUE	No of articles (N, %)	
1	7	(9%)
2	7	(9%)
3	6	(8%)
4	6	(8%)
5	6	(8%)
6	7	(9%)
7	7	(9%)
8	5	(7%)
9	7	(9%)
10	6	(8%)
11	6	(8%)
12	5	(7%)
Total	75	

Note. I-1 to I-12 indicates Issues from 1 to 12.

Figure 4.1*Total number of articles issue wise*

Note. I-1 to I-12 indicates Issues from 1 to 12.

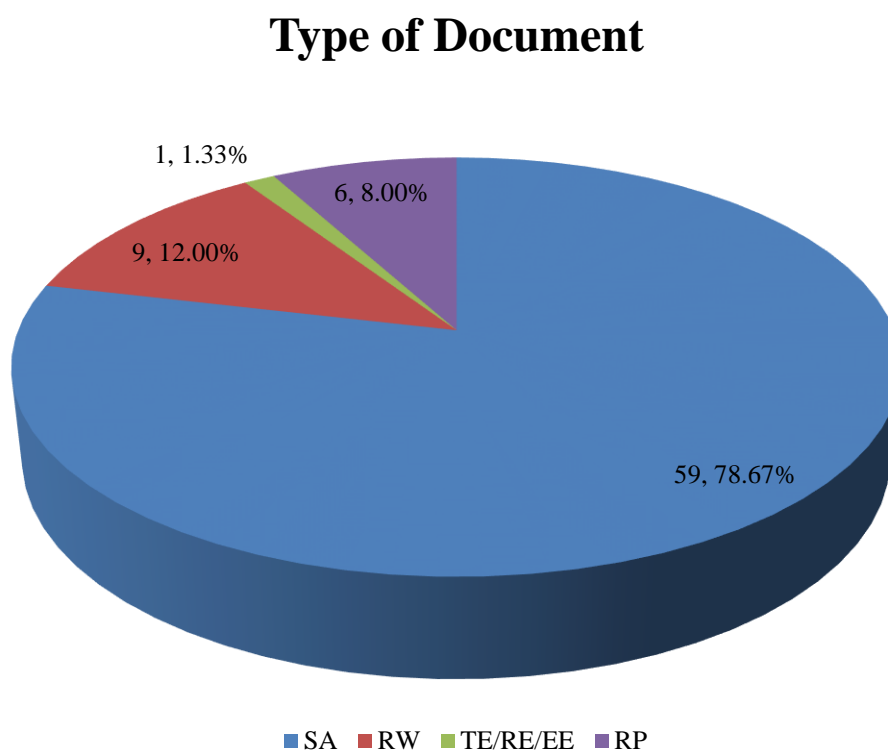
4.2 Document/Article type wise distribution

In the year 2019, out of the 75 published articles, 59(78.67%) were Scientific (SA), 9 (12%) were Review articles (RW), 6 (8%) were Reports, and 1 (1.33%) were communication to the editor, i.e., Letter to the editor and Reply to the editor and also included editorial (TE / RE/EE). Scientific articles ranked first in the total number of articles.

The figure 4.2 represents the total document type distribution in the year 2019.

Figure 4.2

Type of document distribution in 2019



Note. SA-Scientific articles, RW-Review articles, and RP- Reports

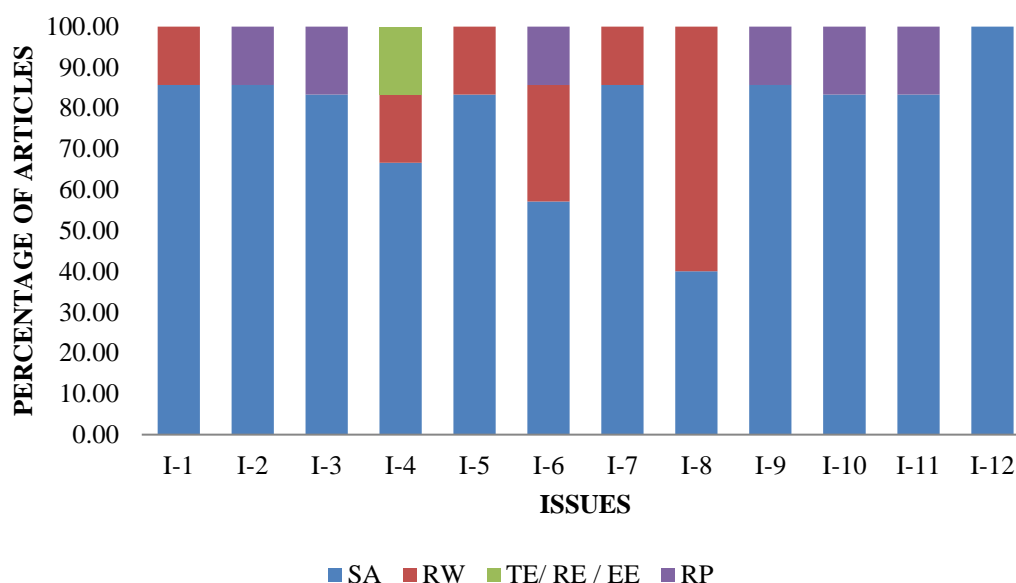
In all the 12 issues individually, Scientific articles were highest followed by review articles and then reports. Only one editorial was present.

- Issue 1,2,7,9, had the highest percentage of scientific articles (85.71%) and issue 8 had the lowest percentage of scientific articles (40.00%).
- Issue 8 (40.00%) had the highest percentage of Review articles.
- Issues 2, 3, 6,9,10,11 had one Reports each.
- Only issue 4 contained one Editorial in the year 2019.

Table 4.2*Issue-wise document type distribution in 2019*

ISSUE NO	SA	RW	TE/ RE / EE	RP
I-1	6(85.71%)	1(14.29%)	0.00	0.00
I-2	6(85.71%)	0.00	0.00	1(14.29%)
I-3	5(83.33%)	0.00	0.00	1(16.67%)
I-4	4(66.67%)	1(16.67%)	1(16.67%)	0.00
I-5	5(83.33%)	1(16.67%)	0.00	0.00
I-6	4(57.14%)	2(28.57%)	0.00	1(14.29%)
I-7	6(85.71%)	1(14.29%)	0.00	0.00
I-8	2(40.00%)	3(60.00%)	0.00	0.00
I-9	6(85.71%)	0.00	0.00	1(14.29%)
I-10	5(83.33%)	0.00	0.00	1(16.67%)
I-11	5(83.33%)	0.00	0.00	1(16.67%)
I-12	5(100.00%)	0.00	0.00	0.00
TOTAL	59(78.67%)	9(12%)	1(1.33%)	6(8%)

Note. I-1 to I-12 indicates Issues from 1 to 12 and SA-Scientific articles, RW-Review articles, and RP- Reports, EE- Editorial

Figure 4.3*Issue-wise document type distribution in 2019*

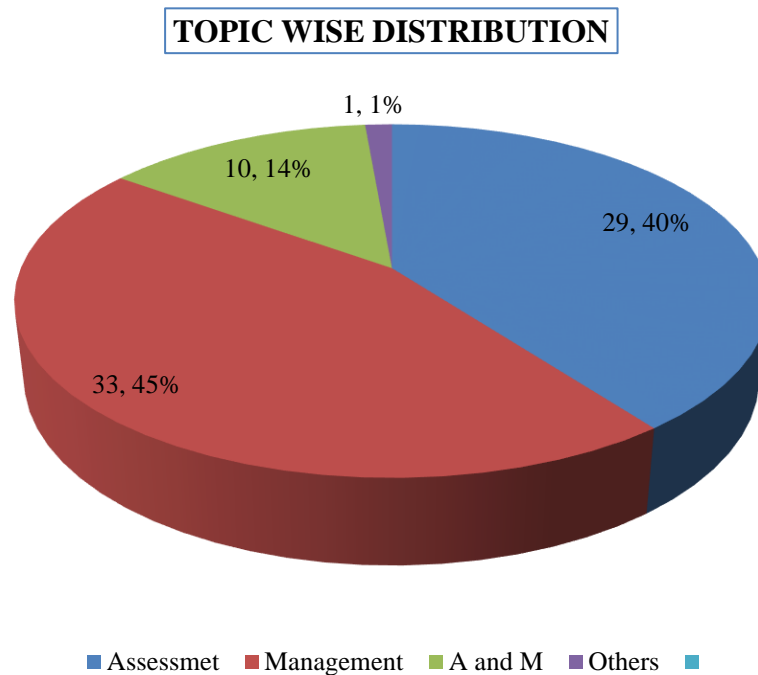
Note. I-1 to I-12 indicates Issues from 1 to 12 and SA-Scientific articles, RW-Review articles, and RP- Reports

4.3 Topic-wise distribution of articles

The total number of articles published in the Journal Aphasiology in the year 2019 were classified based on different topics such as Assessment, Management, Combined (including both assessment and management), and others.

Among the total 75 articles, articles that dealt with aphasia management were the highest, with 34(45.33%) followed by assessment studies with 29 (38.67%) articles. The combined studies with 10(13.33%) articles were the third highest. and the last, others with 2(2.67%) articles.

Figure 4.4 and depict the topic-wise distribution of articles in the year 2019.

Figure 4.4*Topic-wise distribution in the year 2019*

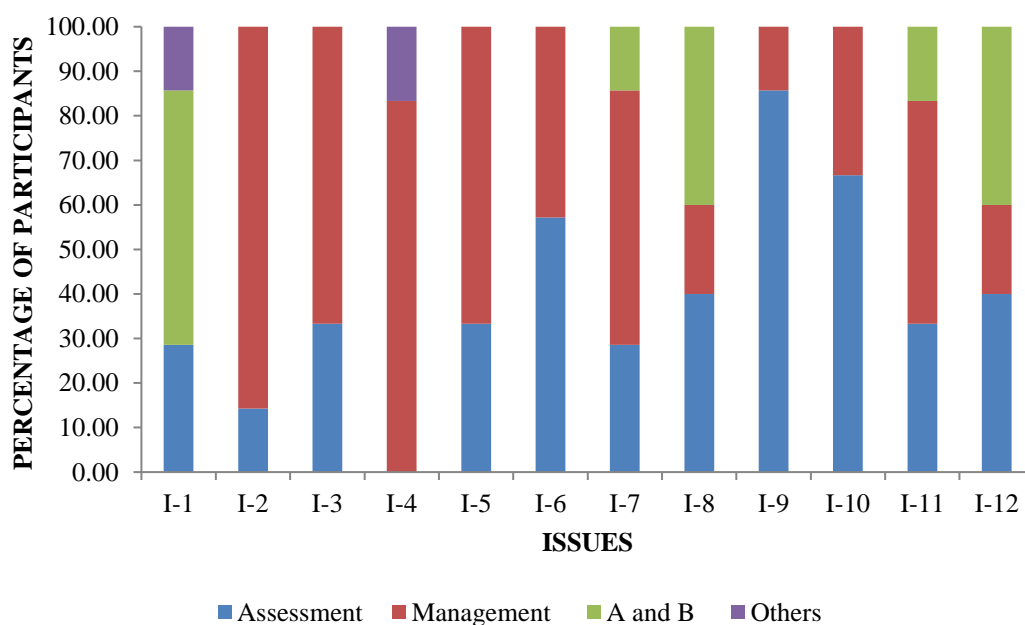
- In second issue among 7 articles 6(85.71%) of them were based on management of persons with Aphasia and one study (14.29%) was based on assessment.
- Articles based on assessment were highest in 9th issue with 6 (85.71%) articles.
- In the first issue of the Journal, combined studies (57.14%) were more than assessment and management.
- Articles that were classified under others were only present in Issue 1 (14.29%) and Issue 4 (16.67%) with one article each.

Figure 4.5 and table 4.3 represent the issue-wise classification of topic-wise distribution.

Table 4.3*Issue-wise topic distribution in 2019*

ISSUE NO	Assessment	Management	A and B	Others
I-1	2(28.57%)	0.00	4(57.14%)	1(14.29%)
I-2	1(14.29%)	6(85.71%)	0.00	0.00
I-3	2(33.33%)	4(66.67%)	0.00	0.00
I-4	0.00	5(83.33%)	0.00	1(16.67%)
I-5	2(33.33%)	4(66.67%)	0.00	0.00
I-6	4(57.14%)	3(42.86%)	0.00	0.00
I-7	2(28.57%)	4(57.14%)	1(14.29%)	0.00
I-8	2(40.00%)	1(20.00%)	2(40.00%)	0.00
I-9	6(85.71%)	1(14.29%)	0.00	0.00
I-10	4(66.67%)	2(33.33%)	0.00	0.00
I-11	2(33.33%)	3(50.00%)	1(16.67%)	0.00
I-12	2(40.00%)	1(20.00%)	2(40.00%)	0.00
TOTAL	29(38.67%)	34(45.33%)	10(13.33%)	2(2.67%)

Note. I-1 to I-12 indicates Issues from 1 to 12.

Figure 4.5*Issue-wise topic distribution in 2019*

Note. I-1 to I-12 indicates Issues from 1 to 12. A and B represents combined studies.

4.4 Type of participants

The total number of articles were classified under different groups such as Person with Aphasia (PWA), Primary Progressive Aphasia (PPA), and other disorders (PO) such as Dementia, Apraxia etc., and Combination of disorders and Professionals such as speech language pathologists, physiotherapists, social workers etc..

- Out of 75 articles, 50 (66.67%) had participants as Person with Aphasia, which also ranked the highest in the list.
- It was followed by professionals, which were 10 (13.33%) articles.
- Articles with other disorders were 8 (10.67%) in number.
- Primary progressive aphasia were 7 (9.33%) in number.
- Issue 1, 2, 9 of the Journal had highest percentage (85.71%) articles with participants as Person with Aphasia.

Figure 4.6 represents the type of participants considered in the articles published in the year 2019.

Figure 4.6

Participant type distribution in 2019

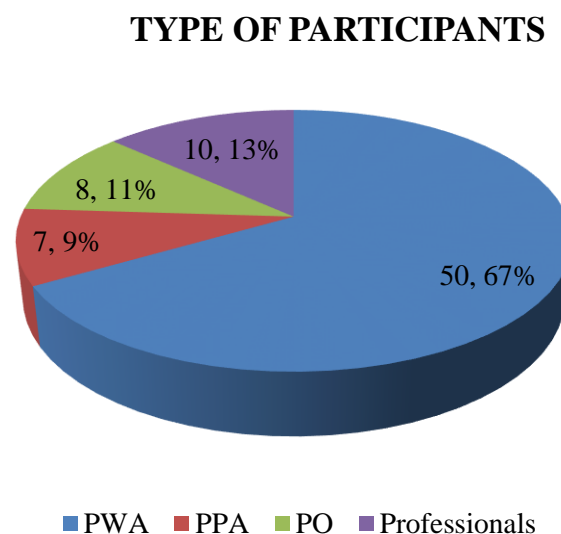


Figure 4.7 and Table 4.4 represents the type of participants considered in the articles published in the year 2019.

Table 4.4

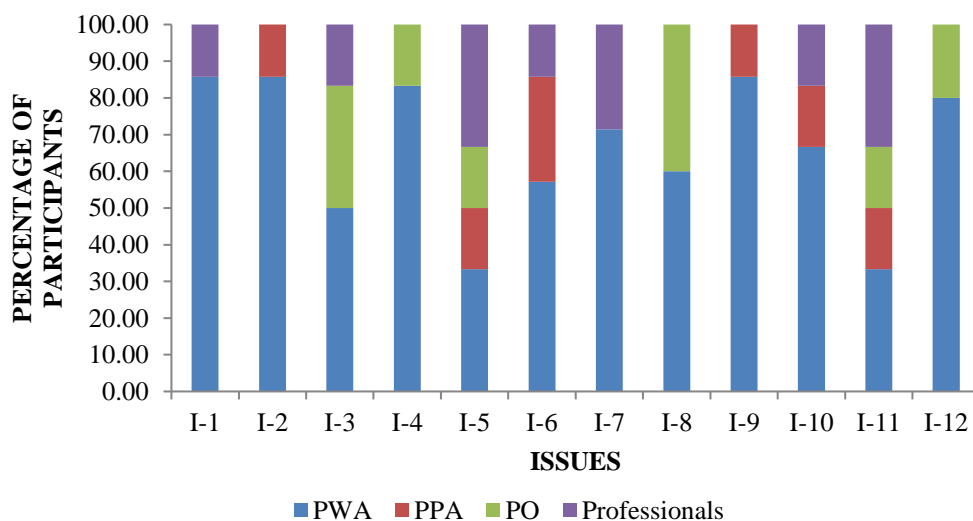
Issue-wise participant type distribution in 2019

ISSUE NO	PWA	PPA	PO	Professionals
I-1	6(85.71%)	0.00	0.00	1(14.29%)
I-2	6(85.71%)	1(14.29%)	0.00	0.00
I-3	3(50.00%)	0.00	2(33.33%)	1(16.67%)
I-4	5(83.33%)	0.00	1(16.67%)	0.00
I-5	2(33.33%)	1(16.67%)	1(16.67%)	2(33.33%)
I-6	4(57.14%)	2(28.57%)	0.00	1(14.29%)
I-7	5(71.43%)	0.00	0.00	2(28.57%)
I-8	3(60.00%)	0.00	2(40.00%)	0.00
I-9	6(85.71%)	1(14.29%)	0.00	0.00
I-10	4(66.67%)	1(16.67%)	0.00	1(16.67%)
I-11	2(33.33%)	1(16.67%)	1(16.67%)	2(33.33%)
I-12	4(80.00%)	0.00	1(20.00%)	0.00
TOTAL	50(66.67%)	7(9.33%)	8(10.67%)	10(13.33%)

Note. I-1 to I-12 indicates Issues from 1 to 12. PWA- Persons with Aphasia, PPA- Primary progressive Aphasia, and PO- Persons with Other disorders.

Figure 4.7

Issue-wise participant type distribution in 2019



Note. I-1 to I-12 indicates Issues from 1 to 12. PWA- Persons with Aphasia, PPA- Primary Progressive Aphasia, and PO- Persons with Other disorders.

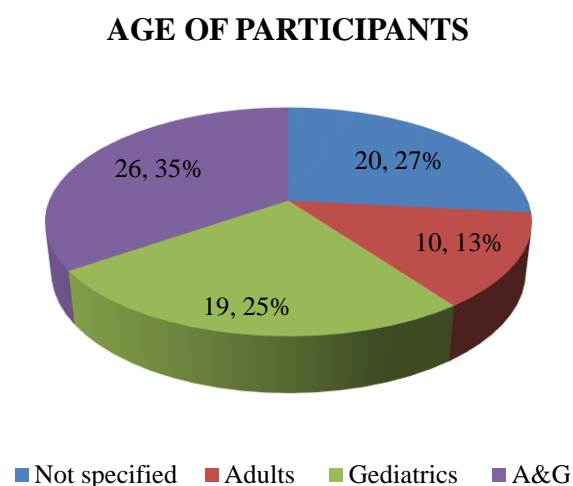
4.5 Age group of participants

- Another factor that was considered for the analysis in the current study was the participant age group. The participant age for each publication in 2019 was categorised.
- The age of the participants was divided into four categories such as Not specified, Adults (18 to 55 years), Geriatric (above 55 years), and both Adults and Geriatrics.
- Out of 75 articles published in the Journal for the year 2019, 26(34.67%) of them had participants in the age group Adults and Geriatric.
- In 20(26.67%) articles, the age group of participants was not specified.
- 19(25.33%) articles had participants in the age group Geriatrics.
- Remaining 10(13.33%) articles were done on adults' population.

Figure 4.8, 4.9 and table 4.6 represents the distribution of articles based on age.

Figure 4.8

Age of participants in 2019

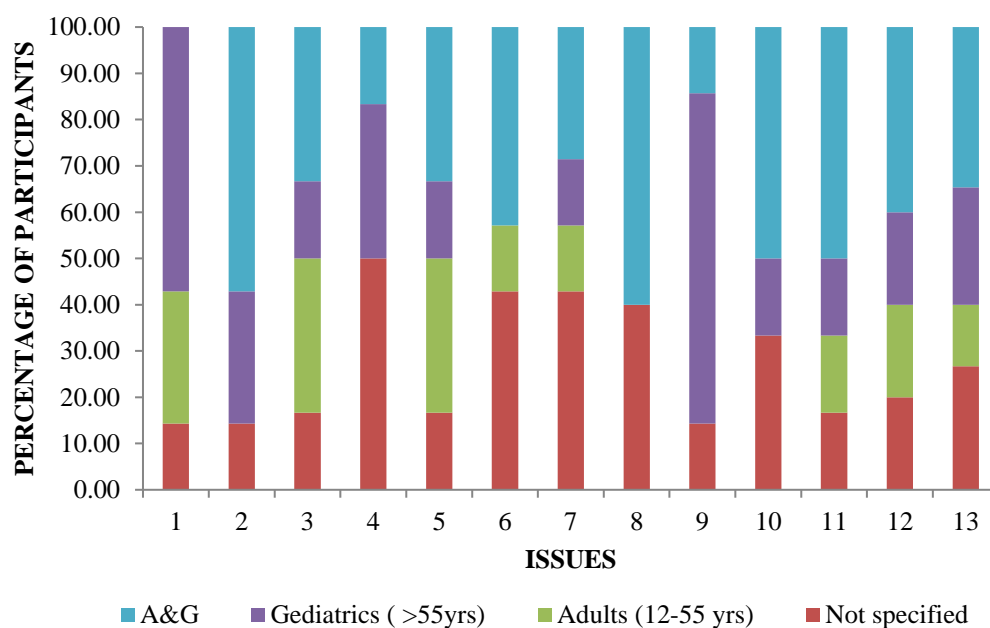


Note. A & G- Adult and Geriatrics

Table 4.5*Issue-wise age of participants in 2019*

ISSUE NO	Not specified	Adults (12-55 yrs)	Geriatrics (>55yrs)	A&G
I-1	1(14.29%)	2(28.57%)	4(57.14%)	0(0.00%)
I-2	1(14.29%)	0(0.00%)	2(28.57%)	4(57.14%)
I-3	1(16.67%)	2(33.33%)	1(16.67%)	2(33.33%)
I-4	3(50.00%)	0(0.00%)	2(33.33%)	1(16.67%)
I-5	1(16.67%)	2(33.33%)	1(16.67%)	2(33.33%)
I-6	3(42.86%)	1(14.29%)	0(0.00%)	3(42.86%)
I-7	3(42.86%)	1(14.29%)	1(14.29%)	2(28.57%)
I-8	2(40.00%)	0(0.00%)	0(0.00%)	3(60.00%)
I-9	1(14.29%)	0(0.00%)	5(71.43%)	1(14.29%)
I-10	2(33.33%)	0(0.00%)	1(16.67%)	3(50.00%)
I-11	1(16.67%)	1(16.67%)	1(16.67%)	3(50.00%)
I-12	1(20.00%)	1(20.00%)	1(20.00%)	2(40.00%)
TOTAL	20(26.67%)	10(13.33%)	19(25.33%)	26(34.67%)

Note. A & G- Adult and Geriatrics. I-1 to I-12 indicates Issues from 1 to 12.

Figure 4.9*Issue-wise age of participants in 2019*

Note. A & G- Adult and Geriatrics. I-1 to I-12 indicates Issues from 1 to 12

4.6 Authorship pattern

In this, section articles were classified based on the number of authors, this includes single author, two authors, three authors, and four or more authors. Among the 75 articles, four or more authored articles ranked highest with 40 (53.3%) articles, three authored papers ranked second with 18 (24%) articles, two authored papers ranked third with 14 (18.67%) articles, and single-authored paper ranked last with 3 (4%) articles in the year 2019.

Figure 4.10, 4.11 and Table 4.6 represents the Authorship pattern in the journal of aphasiology in the year 2019.

Figure 4.10

Authorship pattern in 2019

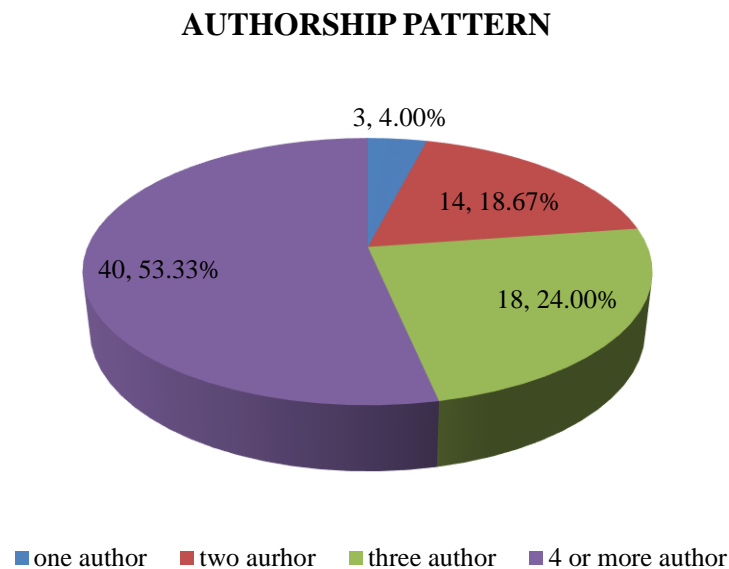
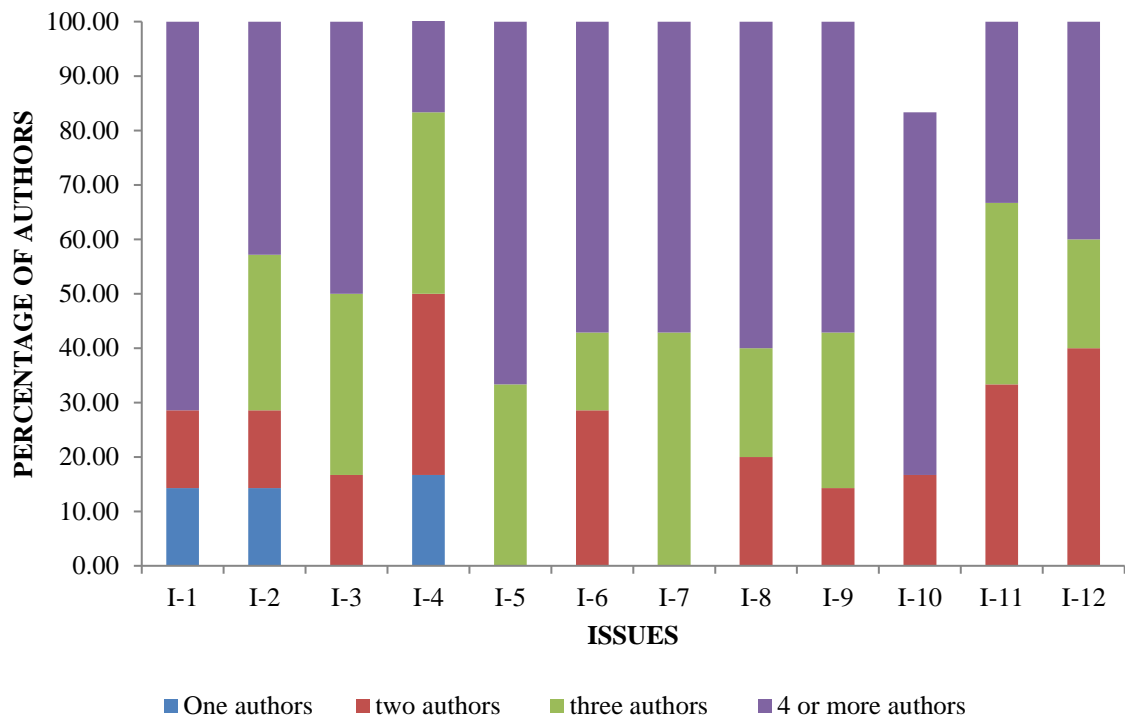


Table 4.6*Issue-wise authorship patterns in 2019*

ISSUE NO	One author	two authors	three authors	4 or more authors
I-1	1(14.29%)	1(14.29%)	0	5(71.43%)
I-2	1(14.29%)	1(14.29%)	2 (28.57%)	3(42.86%)
I-3	0	1(16.67%)	2(33.33%)	3 (50.00%)
I-4	1(16.67%)	2(33.33%)	2(33.33%)	2(33.33%)
I-5	0	0	2(33.33%)	4(66.67%)
I-6	0	2(28.57%)	1(14.29%)	4(57.14%)
I-7	0	0	3(42.86%)	4(57.14%)
I-8	0	1(20.00%)	1(20.00%)	3(60.00%)
I-9	0	1(14.29%)	2(28.57%)	4(57.14%)
I-10	0	1(16.67%)	0	4(66.67%)
I-11	0	2(33.33%)	2(33.33%)	2(33.33%)
I-12	0	2(40.00%)	1(20.00%)	2(40.00%)
TOTAL	3(4.00%)	14(18.67%)	18(24.00%)	40(53.33%)

Note. I-1 to I-12 indicates Issues from 1 to 12

- Single authored articles were found in the 1st, 2nd and 4th issue with one article in each.
- Two authored articles were found highest in the 4th, 6th and 11th issues with two articles each.
- Three authored articles were obtained highest in 7th issue with three articles.
- The number of four or more articles was highest in 1st issue with 5 articles.
- Followed by four or more authored article with 4 each in 5, 6, 7, 9 and 10 issue of the aphasiology journal 2019.

Figure 4.11*Issue-wise authorship patterns in 2019*

Note. I-1 to I-12 indicates Issues from 1 to 12

4.7 Author-wise productivity

Among the authors, Aviva Lerman (2019) from USA published a maximum of two articles in the volume 33 of the journal *Aphasiology*,2019.

4.8 Collaborative pattern

In this section, articles were classified based on collaborative pattern. Here articles were grouped under two categories named, 'collaboration' and 'No collaboration'. The first step was to examine for collaboration in the articles, whether they were written by a single author or a group of authors. If the paper had only one author, it indicated that there was no collaboration. If it had multiple authors, it suggested there was a collaboration.

- In the year, 2019 collaboration was present in 73, (97.33%) articles.
- There was no collaboration in 2, (2.67%) articles.
- Collaboration was present in all issues except issue no, 1 and 2.

Table 4.7

Issue-wise distribution of publications with and without collaboration in 2019

ISSUE NO	Yes	No
I-1	6,(85.71%)	1, (14.29%)
I-2	6,(85.71%)	1, (14.29%)
I-3	6,(100%)	0,(0%)
I-4	6, (100%)	0, (0%)
I-5	6, (100%)	0,0
I-6	7, (100%)	0,0
I-7	7, (100%)	0,0
I-8	5, (100%)	0,0
I-9	7, (100%)	0,0
I-10	6, (100%)	0,0
I-11	6, (100%)	0,0
I-12	5, (100%)	0,0
TOTAL	73, (97.33%)	2,(2.67%)

Note. I-1 to I-12 indicates Issues from 1 to 12

Figure 4.12

Number of publications with or without collaboration in the year 2019

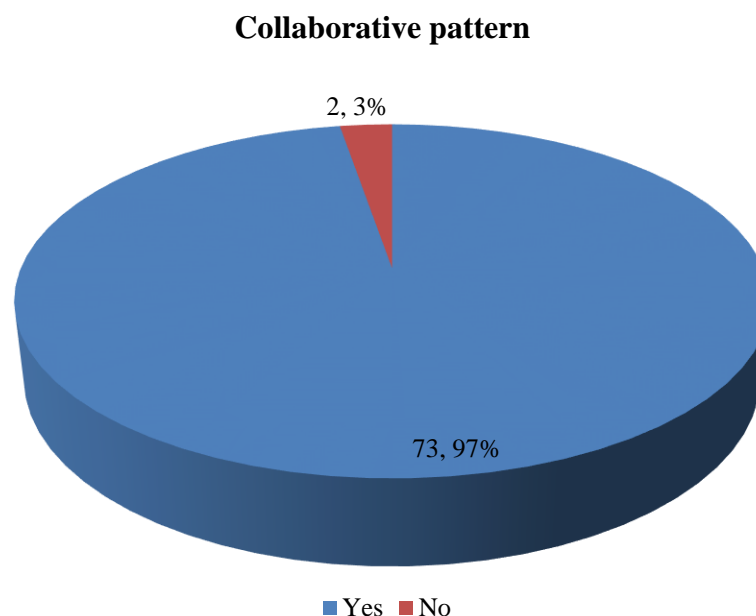
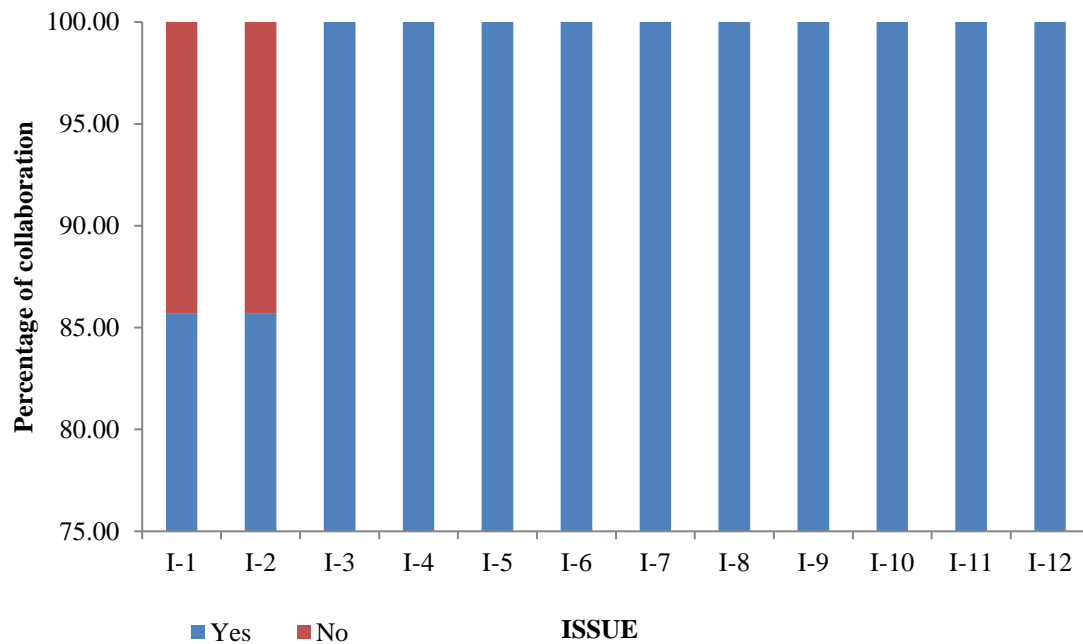


Figure 13

Issue-wise distribution of publications with and without collaboration in 2019

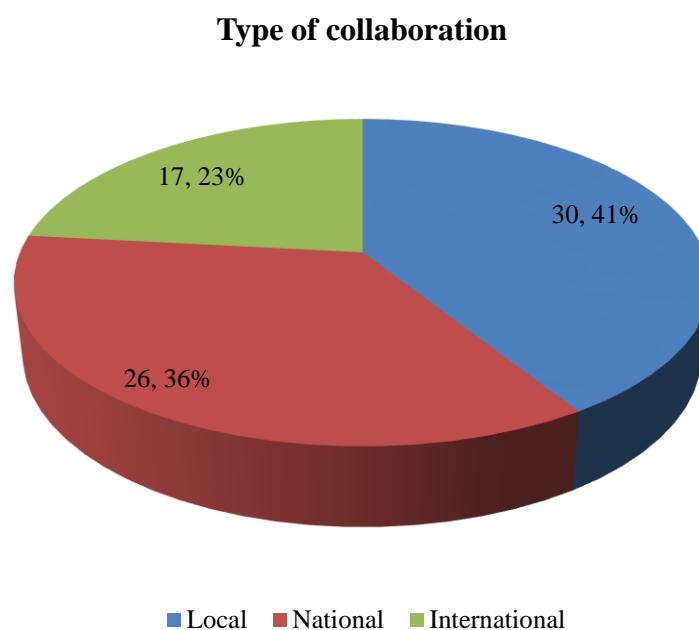


Note. I-1 to I-12 indicates Issues from 1 to 12

Articles consisted of collaboration again classified into three categories based on type of collaboration. These include local collaboration, national collaboration, and international collaboration.

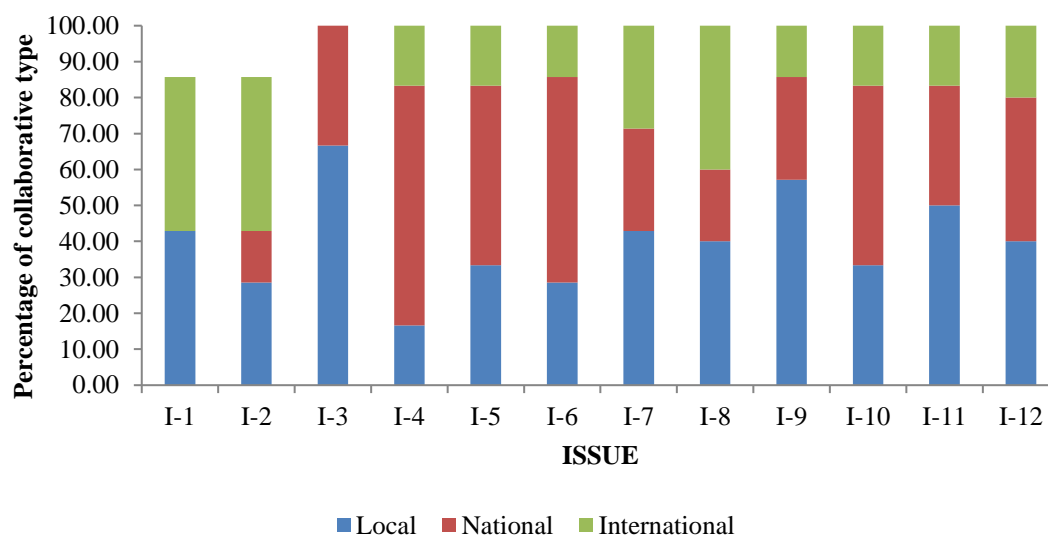
- It was observed that local collaboration was the most with 30 (40.00%) articles in the year 2019.
- National collaboration ranked second highest with 26(34.67%) articles in the year 2019
- The international collaboration was the least observed collaborative pattern with 17(22.67%) articles in the year 2019.

Figure 4.14, 4.15 and table 4.8 shows the different types of collaboration.

Figure 4.14*Type of collaboration in the year 2019***Table 4.8***Issue-wise type of collaborations in 2019*

ISSUE NO	Local	National	International
I-1	3,(42.86%)	0.00	3, (42.86%)
I-2	2 (28.57%)	1(14.29%)	3 (42.86%)
I-3	4 (66.67%)	2(33.33%)	0.00
I-4	1 (16.67%)	4(66.67%)	1(16.67%)
I-5	2 (33.33%)	3(50.00%)	1(16.67%)
I-6	2 (28.57%)	4(57.14%)	1(14.29%)
I-7	3 (42.86%)	2(28.57%)	2(28.57%)
I-8	2 (40.00%)	1(20.00%)	2(40.00%)
I-9	4 (57.14%)	2 (28.57%)	1(14.29%)
I-10	2 (33.33%)	3 (50.00%)	1 (16.67%)
I-11	3 (50.00%)	2 (33.33%)	1 (16.67%)
I-12	2 (40.00%)	2(40.00%)	1(20.00%)
TOTAL	30 (40.00%)	26(34.67%)	17(22.67%)

Note. I-1 to I-12 indicates Issues from 1 to 12

Figure 4.15*Issue-wise type of collaborations in 2019*

Note. I-1 to I-12 indicates Issues from 1 to 12

4.9 Collaborative index (CI), Degree of collaboration (DC), and Collaboration co-efficient (CC)

In Table 4.9, the collaborative index, degree of collaboration and collaboration co-efficient are provided for the journal of aphasiology in the year 2019.

- The average number of authors (CI) ranged from 3 to 7 Collaborative index was highest in issue number 10 (6.50) and lowest for issue number 4(3).
- Degree of collaboration (DC) was 1 for all issues except 1 and 2. Degree of collaboration was 0.86 for first and second issue.
- Collaboration co-efficient (CC) ranged from 0.6 to 0.8. Collaboration co-efficient was highest for both 7 and 10 issues (0.77). CC value was lowest for issue number 2(0.62). It indicated that, the proportion of multi-authored papers was more when compared to single-authored papers.

Figure 4.16, figure 4.17, and figure 4.18 represents the issue wise measures of collaboration index, degree of collaboration and collaboration co-efficient respectively.

Table 4.9

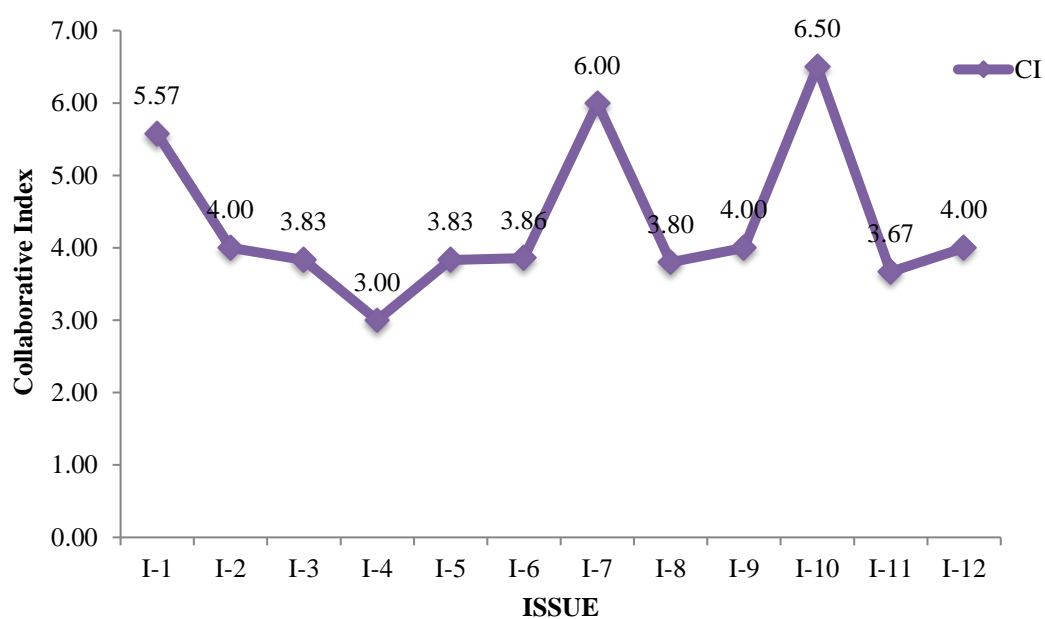
Collaboration parameters of articles in 2019

ISSUE NO	CI	DC	CC
I-1	5.57	0.86	0.67
I-2	4.00	0.86	0.62
I-3	3.83	1.00	0.70
I-4	3.00	1.00	0.64
I-5	3.83	1.00	0.73
I-6	3.86	1.00	0.69
I-7	6.00	1.00	0.77
I-8	3.80	1.00	0.70
I-9	4.00	1.00	0.69
I-10	6.50	1.00	0.77
I-11	3.67	1.00	0.66
I-12	4.00	1.00	0.67

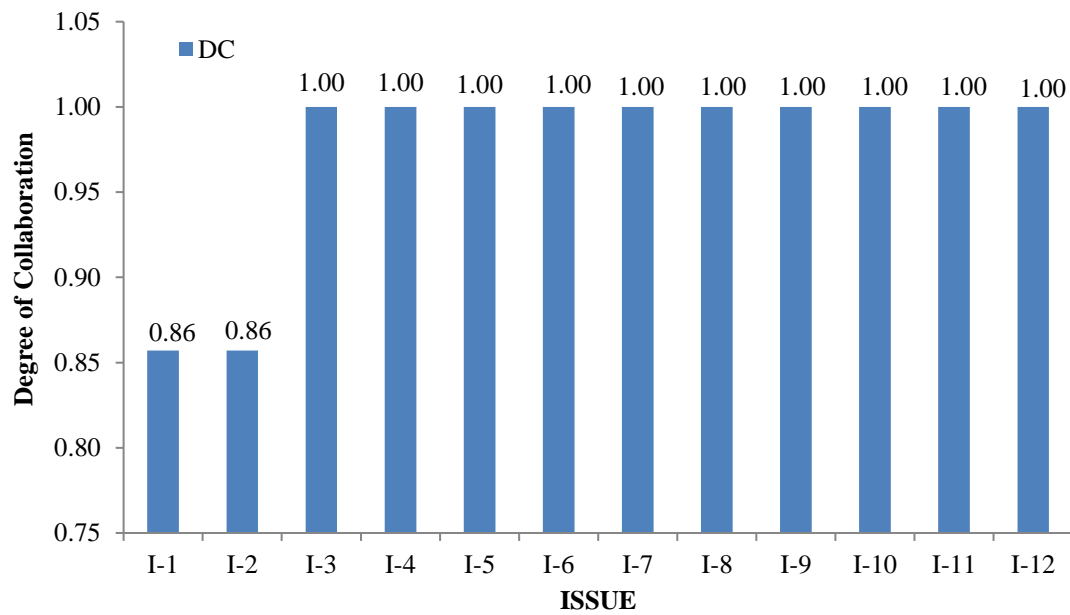
Note. I-1 to I-12 indicates Issues from 1 to 12. CI- Collaboration Index, DC- Degree of Collaboration, and CC- Collaboration Co-efficient

Figure 4.16

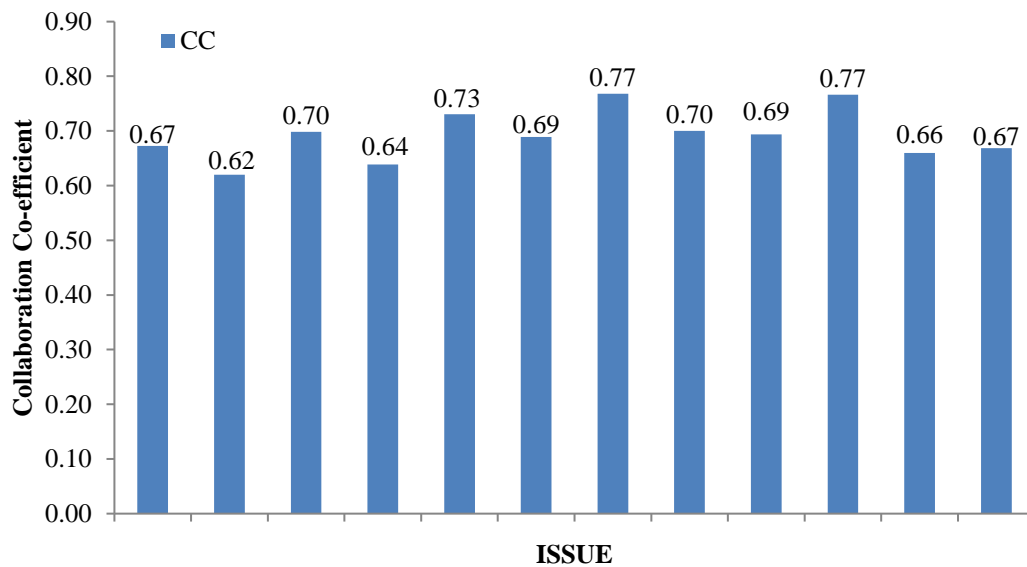
Issue -wise collaboration Index in 2019



Note. I-1 to I-12 indicates Issues from 1 to 12. CI- Collaboration Index.

Figure 4.17*Issue-wise degree of collaboration in 2019*

Note. I-1 to I-12 indicates Issues from 1 to 12. DC- Degree of Collaboration.

Figure 4.18*Issue-wise Collaboration co-efficient in 2019*

Note. I-1 to I-12 indicates Issues from 1 to 12. CC- Collaboration Co-efficient.

4.10 Country-wise productivity

Among 75 articles, the highest number of articles was published in the United States of America with a total of 22 publications in the journal aphasiology in 2019. The second most articles are from Australia with 19 articles followed by England with 12. The fourth country was Canada, with 7 articles. Ireland, Sweden and South Africa shares the fifth position with 3 publications each. Only one article published from India in the journal aphasiology in 2019.

Table 4.10 depicts the top five countries in 2019.

Table 4.10

Country-wise productivity in 2019

Rank	Country	No. of articles
I	USA	22
II	Australia	19
III	England	12
IV	Canada	7
V	Ireland	3
V	Sweden	3
V	South Africa	3

4.11 Number of citations of the article

As of 14-07-2022, the maximum number of citations obtained for an article was in the Issue one with 41 citations and the minimum number of citation 0 which were present in the issues 1, 2, 6 and 8.

Table 4.11 represent the top 5 cited articles.

Table 4.11

Top five cited articles of 2019

Rank	Article	No. of citations
I	Paplikar, A., Mekala, S., Bak, T. H., Dharamkar, S., Alladi, S., & Kaul, S. (2019). Bilingualism and the severity of poststroke aphasia. <i>Aphasiology</i> , 33(1), 58-72. https://doi.org/10.1080/02687038.2017.1423272	41
II	Wiley, R. W., & Rapp, B. (2019). Statistical analysis in Small-N Designs: using linear mixed-effects modeling for evaluating intervention effectiveness. <i>Aphasiology</i> , 33(1), 1-30. https://doi.org/10.1080/02687038.2018.1454884	29
III	Purdy, M., Coppens, P., Madden, E. B., Mozeiko, J., Patterson, J., Wallace, S. E., & Freed, D. (2019). Reading comprehension treatment in aphasia: A systematic review. <i>Aphasiology</i> , 33(6), 629-651. https://doi.org/10.1080/02687038.2018.1482405	26
IV	Baird, A., & Thompson, W. F. (2019). When music compensates language: A case study of severe aphasia in dementia and the use of music by a spousal caregiver. <i>Aphasiology</i> , 33(4), 449-465. https://doi.org/10.1080/02687038.2018.1471657	24
IV	Olsson, C., Arvidsson, P., & Blom Johansson, M. (2019). Relations between executive function, language, and functional communication in severe aphasia. <i>Aphasiology</i> , 33(7), 821-845. https://doi.org/10.1080/02687038.2019.1602813	24
V	Trebilcock, M., Worrall, L., Ryan, B., Shrubsole, K., Jagoe, C., Simmons-Mackie, N., ... & Le Dorze, G. (2019). Increasing the intensity and comprehensiveness of aphasia services: identification of key factors influencing implementation across six countries. <i>Aphasiology</i> , 33(7), 865-887. https://doi.org/10.1080/02687038.2019.1602860	23

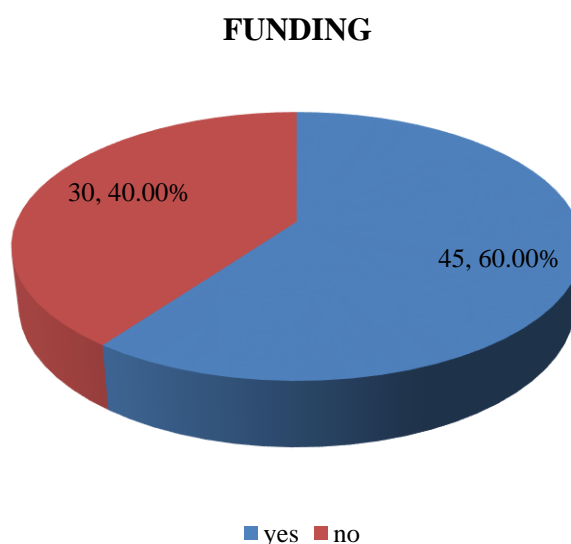
4.12 Funding Source

In this section, articles authored by researchers who got financing or grants for their research were categorised as "Funded," while articles written by researchers who did not get funding from any organisations or research grants were categorised as "No funding". Out of 75 articles published, 45(60%) of them had funding whereas 30(40%) of them did not receive any funding in the year 2019 for the journal Aphasiology.

Figure 4.19 and table 4.12 represents the issue wise distribution of funding in 2019.

Figure 4.19

No. of publications with and without funding

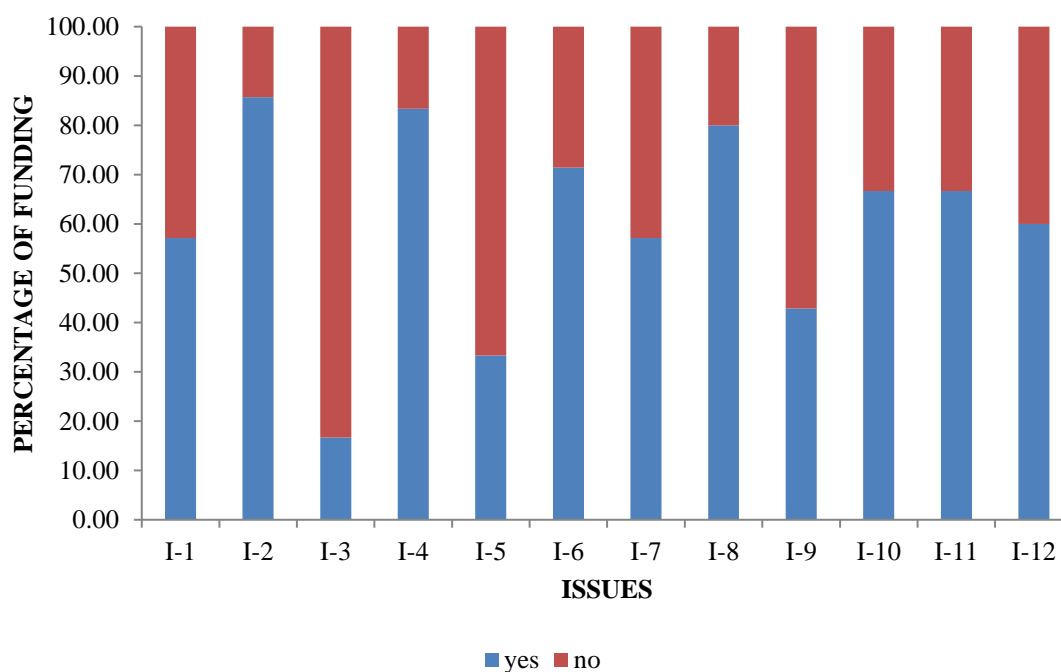


- The highest funding was found in Issue 2 with 6 (85.71%) articles.
- The lowest funding was found in issue 3 with 1(16.67%) article
- In issue 3 only one article (16.67%) received funding and five articles (83.33%) did not receive any funding in the year 2019.

Table 4.12*Issue-wise funding*

ISSUE NO	YES	NO
I-1	4(57.14%)	3(42.86%)
I-2	6(85.71%)	1(14.29%)
I-3	1(16.67%)	5(83.33%)
I-4	5(83.33%)	1(16.67%)
I-5	2(33.33%)	4(66.67%)
I-6	5(71.43%)	2(28.57%)
I-7	4(57.14%)	3(42.86%)
I-8	4(80.00%)	1(20.00%)
I-9	3(42.86%)	4(57.14%)
I-10	4(66.67%)	2(33.33%)
I-11	4(66.67%)	2(33.33%)
I-12	3 (60%)	2 (40%)
TOTAL	45(60.00%)	30(40.00%)

Note. I-1 to I-12 indicates Issues from 1 to 12.

Figure 4.20*Issue-wise funding*

Note. I-1 to I-12 indicates Issues from 1 to 12.

In conclusion, the above results provide details about the journal *Aphasiology*'s number of articles, document-wise distribution, author related parameters, collaboration parameters, country-wise productivity, citations and funding in the year 2019.

CHAPTER V

DISCUSSION

The aim of the present study is to determine the scientometric parameters of articles published in the Journal aphasiology for a period one year, 2019. The database of this study comprises 75 journal articles published in the journal aphasiology in the year 2019. For each article, Article type, Title of the article, the number of authors, the country from which the authors are, Collaboration from different institutes, Topic-wise distribution of article, Age group of the participants, the number of citations were collected. Information was collected by going through each article individually and organized, tabulated, and segregated issue-wise.

The results of the study showed that, document-wise the journal had the highest research output in scientific articles ranked first in 2019. Out of the 75 published documents, 78.67% were Scientific articles (SA), second was Review articles (RW), followed by Reports, and least in number was editorials. Communication to the editor, i.e., Letter to the editor and Reply to the editor and also includes editorial (TE / RE/EE). Scientific articles were the highest type of documents published in the fields of phonology and audiology (Batcha & Chaturbhuji, 2019; Nandeeshia & Begum, 2017), which was observed in the present study also. These findings also indicate that professionals are significantly contributing to the growth of research in the field of Aphasia.

A previous research that examined how persons with mild dementia utilised assistive technology based on qualitative data gathered from semi-structured interviews identified themes and sub-themes (Asghar et. al, 2017). The authors used a different strategy in a second investigation to determine topic field-wise collaborations in

general sciences. With the use of Essential Science Indicators, each article included in the dataset under consideration was categorised into several disciplines (Gazni et al. 2011). Keyword search and cluster analysis approaches can also be used for topic-wise categorization (Pestana et. al, 2017; Pestana and Sobral, 2019).

Based on topic-wise distribution, articles in the area of management were the highest (34) followed by articles in the area of assessment (29) and then combined (10) articles. This highlights the significance of assessment and management studies in the ongoing research in the field of aphasia. Analysis of the topic-wise distribution showed that the studies carried out on Persons with Aphasia were the highest followed by professionals and then other disorders such as dementia, apraxia. It can be due to that the journal aphasiology aims to focus on research output in aphasia.

In the year 2019 of the Journal aphasiology, an analysis of the authorship pattern showed that multi-authored papers were more when compared to single-authored papers. The authorship in the journal ranged from single author to four or more than four (4) authors. Among the seventy-five articles, four or more authored articles had highest number of articles, followed by three authored papers then two authored papers, and last single-authored paper, which had lowest number of articles in the year 2019. Multi-authored papers may be more common as a result of the limited availability of research materials, the distribution of work when doing the research, and the collaboration of experts from various fields, all of which improve the quality of the research output. In single authored paper, the author will cover the entire topic based on his or her expertise and knowledge. Similar pattern of results were observed in study done in the field of Audiology and research in Asperger's syndrome. The highest

occurring collaboration was observed to be either two-authored or three authored papers (Lorenzo et al., 2016; Nandeeshha & Begum, 2017).

Single authored publications may be less in number due to lack of adequate resources, time constraints, inadequate infrastructure and lack of funding. Further, multi-authored collaborations may be more advantageous. When multiple authors are involved, the research work can be divided. Hence, work can be done more efficiently and efficiently. Collaboration between various disciplines can result in a more holistic approach to research.

Scientometric indicators like Collaborative Index (CI), Degree of Collaboration (DC), and Collaboration Co-efficient (CC) were used to analyse the authorship data and collaborative patterns. The results showed that the average number of authors (CI) ranged from 3 to 6. It is difficult to interpret because Collaborative Index has no upper limit. Degree of collaboration (DC) was 1 for all except 2 issues. It was 0.86 for first and second issue. If the degree of collaboration approaches 1, it indicates that more multi-authored papers. It concluded that in 2019 most of the articles were multi-authored. The probabilities of multi-authored papers were high when Collaboration Co-efficient (CC) value approach 1. Collaboration co-efficient (CC) ranged from 0.6 to 0.8. Collaboration co-efficient was highest for both 7th and 10th issues (0.77). The lowest CC value was 0.62. It indicated that, the proportion of multi-authored papers was more when compared to single-authored papers. In 2019 a study conducted by Batcha & Chaturbhuj in the field of Phonology the results contradict, the results of present study were obtained. They reported that the majority of publications identified between the years 2000-2017 were single authored papers in the field of Phonology than multi authored. Suggesting that collaborative research in the field may be limited. The

contradictions between these results may be due to the difference between the time period selected for review. The inherent differences between the fields, the differences in the research trends within the fields and the use of different research methodologies may also explain the disagreement between the current study's finding and the existing literature.

Analysis of Author-wise productivity revealed that, among the authors, Aviva Lerman from USA ranked first with 2 articles in the year 2019. The productivity of an author could be influenced by various factors. These include; the professional background of the author i.e. whether they are full time academicians or researchers, type of research conducted i.e. whether the research is theoretical or experimental in nature, availability of adequate resources for research i.e. infrastructure and equipment, and presence of funding.

Analysis of Collaborative pattern in the articles indicated that, in the year 2019 collaboration was present in 73 articles out of 75. For 2 articles there were no collaboration. The type of collaboration includes local collaboration, national collaboration, and international collaboration. It was observed that local collaboration had the highest number of articles (40.00%) followed by National collaboration (34.67%) then International collaboration (22.67%) in the year 2019. It can be due to the difference in income, language, culture, and politics (Gazni et al. 2012). Greater results that are more in line with local priorities can be achieved through local collaboration, and it also provides access to additional funds, either because several local authorities are collaborating and contributing money or because one particular institution can then access additional funds.

Analysis of country wise productivity showed that United States of America was the highest producing country with twenty-two articles published in the journal *aphasiology* in 2019. It was observed that Australia has second highest producing country with nineteen articles followed by United Kingdom with 12 articles in the year 2019. It is tie-in with scientometric studies done in the field of Asperger's syndrome, Audiology, Dementia and Dysgraphia and Phonology (Lorenzo et al.,2016;Nandeesh & Begum;2017, Asghar et al.,2017, Gupta et al.,2018, Batcha & Chaturbuj;2019) where United States Of America ranked first with the highest productivity. The reason why USA ranks 1st in research could become of a number of reasons. USA has state of the art infrastructure, offers financial assistance for research projects and promote academicians to become full time research scholars. A country has to ensure ease and autonomy of carrying out scientific research while also maintaining the quality and ethical standards of research output. In order to be able to balance between the two, establishment of a governing body with individuals who are both experienced and show expertise in the field becomes necessary. Such establishments setups cannot be achieved without legal and financial aid from the government of the country. If they have good scientific knowledge, this will strengthen their presence across the world .And also they have good credibility of the research.

When it comes to India the number of articles published is very less. It can be due to that in India the numbers of hard-core researchers are very less. Added to this, the lack of participation in international collaborative research may also contribute to India low research productivity. In western countries, multidisciplinary collaborations in research are becoming increasingly common in the recent years. In India however, as multidisciplinary and transdisciplinary approaches to both rehabilitation and research are still in the emerging phase, research of this kind is very rarely observed.

Google Scholar, a web search engine, was used to check the number of citations for 75 articles (Google Scholar, n.d.), as it contains many articles that have not yet been added to the Web of Science or Scopus database, such as “in the press” papers that have been posted online but have not yet been given an issue number (How Reliable Is Google Scholar? - Research HUB.). Paplikar, A., Mekala, S., Bak, T. H., Dharamkar, S., Alladi, S., & Kaul, S. (2019). *Bilingualism and the severity of post stroke aphasia. Aphasiology, 33(1), 58-72* was the highest cited article in the aphasiology journal in 2019. This article belongs to both assessment and management (combined). It indicates that the researchers are more interested in both assessment and management of aphasia.

Out of 75 articles published, 45 of them had funding in the year 2019 for the journal Aphasiology. Most of the articles were funded by the National Institutes of Health/ National Institute on Deafness and Other Communication Disorders (NIH/ NIDCD).

This study gives a brief overview of the current research trend in the field of Aphasia for the year 2019. The study also discusses the state of research in India and the numerous factors that influence its research productivity. The necessity for a more detailed study, taking a longer time frame and a bigger database has to be done to generalize the findings in Aphasia.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The goal of the current study was to understand the research trends in the field of aphasia in the year 2019. Articles selected from the journal 'aphasiology' as it is one of the world's recognized journal in the field of aphasia. Scientometric tools were used to analyse the research trends in the year 2019. Objective of the study includes number of authors, distribution of articles and publications, authorship pattern, author-wise productivity, collaboration pattern, country-wise productivity, and funding agencies for the year 2019 in the journal Aphasiology.

Each article's information was taken directly from the aphasiology journal in 2019. The All India Institute of Speech and Hearing (AIISH), Mysore Library and Information Centre's E-Journal served as the database for selecting papers. The journal's articles appear in twelve issues that are published each month. Articles from all 12 issues were analysed for the study.

Each article was read in depth to gather all the data, which was then compiled, tabulated, and categorised according to each issue. A Microsoft Excel spreadsheet was used for organising the collected data. The information was analysed based on the total number of articles, distribution of document types, authorship patterns, author-wise productivity, collaboration patterns, country-wise productivity, topic-wise- distribution, participant types, participant age groups, number of citation, and funding sources. The data was analysed using scientometric tools including the degree of collaboration, collaboration Index and the collaboration co-efficient.

The results of the study revealed the following:

- I. The total research articles published in the year 2019 was seventy-five articles.
- II. In seventy-five articles, 78.67% were Scientific articles (SA), 12% were Review articles (RW), 8% were Reports, and 1.33% was Communication to the editor, i.e., Letter to the editor and Reply to the editor and also includes editorial (TE / RE/EE).
- III. Among 75 articles, articles that dealt with aphasia management were the highest, with 34(45.33%) followed by assessment studies and then combined studies.
- IV. The most number of research were carried out on persons with Aphasia (66.67%) followed by professionals (13.33%) and then other (10.67%) disorders.
- V. The highest number of research was done in Adults and Geriatric population (48.00%).
- VI. It was found that multi-authored papers (96%) were high when compared to single-authored papers (4%). Four or more authored papers (53.3%) are the highest in multi-authored articles.
- VII. Collaboration index ranges from ranged from 3 to 7 and Degree of collaboration and collaboration coefficient ranges mostly from 0.6 to 1 which implies that the proportion of multi-authored papers was more when compared to single-authored papers.
- VIII. Among the authors, Aviva Lerman (2019) from USA published a maximum of two articles in the year 2019.
- IX. Local collaboration was the highest followed by national and then international collaboration.

- X. United States of America was the country with most number of articles published that is 22.
- XI. As of 14-07-22, the highest number of citations received for an article in 2019 was forty one (41).
- XII. The National Institutes of Health's National Institute on Deafness and Other Communication Disorders ranked first among the funding agencies by funding in the year 2019.

In summary, this study used the journal Aphasiology to observe and describe the current trends in research in the field of aphasia. A comprehensive bibliometric analysis of articles from aphasiology was performed. This study provides a summary of the research trends and topics covered in the selected Journal.

Implications of the study

- a) This research can help researchers in determining the area of a research gap for future studies.
- b) This research can be a guide to the researcher to choose an appropriate funding agency, based on the type of research.

Limitations

- a) As one-year time period was taken for the study, only that year's trend was observed. Therefore, it was difficult to carry out other scientometric parameters like Doubling Time (DT), Relative Growth Rate, and Growth Rate.
- b) As only one Journal was considered for this study, the trend observed in Aphasia research cannot be generalized.

Future directions

- a) A similar scientometric review can be carried in other areas of communication disorders such as Dysphagia, Dementia, Augmentative and Alternative Communication (AAC) and voice disorders.
- b) Also, studies can be done on a longer time period such as 10 or 20 years in the same or combination of journals which yields better research output.

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