

Parent-Adolescent Communication on Sexual and Reproductive Health Issues: A Bibliometric Analysis

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Received August 26, 2024; Revised November 8, 2024; Accepted December 17, 2024

Cite This Paper in the Following Citation Styles

(a): [1] Rafazila Ramli, Md Mizanur Rahman, Gerraint Gillan, Ahmad Sofian, Rasitasam Safii, Jacey Lynn Minoi, Stephanie Chua Hui Li, Lee Jun Choi, "Parent-Adolescent Communication on Sexual and Reproductive Health Issues: A Bibliometric Analysis," *Universal Journal of Public Health*, Vol. 13, No. 1, pp. 131 – 145, 2025. DOI: 10.13189/ujph.2025.130113.

(b): Rafazila Ramli, Md Mizanur Rahman, Gerraint Gillan, Ahmad Sofian, Rasitasam Safii, Jacey Lynn Minoi, Stephanie Chua Hui Li, Lee Jun Choi (2025). *Parent-Adolescent Communication on Sexual and Reproductive Health Issues: A Bibliometric Analysis*. *Universal Journal of Public Health*, 13(1), 131 - 145. DOI: 10.13189/ujph.2025.130112.

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Abstract The study aims to analyze the research trends, collaborative networks, and evolving themes in parent-adolescent sexual and reproductive health (SRH) communication research from 2010 to 2024. A bibliometric analysis was conducted using the Web of Science (WoS) Core Collection database. The search, completed on May 23, 2024, used the terms “parent-adolescent communication” and “sexual and reproductive health” as search criteria. We identified 29 documents and exported the data in RIS format for analysis. VOSviewer software was employed to visualize co-authorship networks, keyword trends, and research hotspots. The analysis revealed significant shifts in research focus over time, from communication dynamics in 2019 to a stronger emphasis on adolescent SRH issues by 2020. Key research areas included public health, paediatrics, and psychology, with notable contributions from institutions such as Bahir Dar University, The Centres for Disease Control and Prevention (USA), and Makerere University. Collaborative networks identified highly active research groups, with researchers like Kemigisha E and Nyakato VN playing central roles. Keyword trends indicated a growing interest in topics such as HIV prevention, mental health, and adolescent risk behaviours. This study highlights the dynamic nature of

parent-adolescent SRH communication research, emphasizing the importance of addressing evolving SRH challenges. Despite its reliance on a single database, the analysis provides valuable insights into research trends and collaborations. Future studies should incorporate multiple databases and broader publication types to enhance understanding and support effective policy development.

Keywords Parent-Adolescent Communication, Sexual and Reproductive Health, Bibliometrics, Knowledge Graph, VOSviewer

1. Introduction

Parent-adolescent communication on sexual and reproductive health (SRH) is crucial for promoting healthy sexual practices and reducing risky behaviours among adolescents [1-5]. Effective communication can significantly impact adolescents' attitudes, behaviours, and knowledge about SRH, leading to better decision-making and reproductive health outcomes [1, 4]. However, studies have shown that parent-adolescent communication on SRH issues remains inadequate, with adolescents often

preferring to discuss these matters with their peers rather than with their parents [2, 4]. In recent years, there has been a growing interest in understanding the factors that influence parent-adolescent communication on SRH issues, particularly in developing countries where adolescents are at a higher risk of STDs, including HIV infections [2, 4]. Improving parent-adolescent communication at all community levels is essential for addressing the rising incidence of STDs, including HIV infections, among adolescents [4].

Sexual and reproductive health (SRH) is vital to overall adolescent well-being. Effective communication between parents or guardians and adolescents regarding SRH significantly promotes informed decision-making, healthy relationships, and positive sexual health outcomes [6-8]. Modern evidence has highlighted the vulnerability of adolescence as a critical time when risky sexual behaviour can emerge. During adolescence, individuals go through self-discovery, exploring their identities and forming personal values and beliefs [9]. However, this exploration can sometimes lead to misunderstandings and misconceptions about sexual and reproductive health (SRH). Understanding and addressing this aspect of adolescent development is crucial to promoting healthy behaviours and supporting their overall well-being. Recognizing the importance of parents or guardians as primary sources of guidance, it is imperative to facilitate open and effective communication between parents and adolescents regarding SRH matters [10]. Such communication plays a fundamental role in shaping adolescents' attitudes, knowledge, and decision-making processes related to sexuality, contraception, consent, sexually transmitted infections (STIs), and overall reproductive health.

Bibliometric analysis is a valuable tool for assessing the current state of research on parent-adolescent communication on SRH issues, identifying research gaps, and providing insights into future research directions [11-14]. Therefore, this bibliometric analysis aims to provide a comprehensive overview of current research on parent-adolescent communication on SRH issues, highlighting the key findings, research gaps, and future research directions. The analysis would focus on studies conducted in developing countries, where adolescents are at a higher risk of STDs, including HIV infections. The findings of this analysis would be useful for policy-makers, researchers, and healthcare providers working to improve adolescent SRH outcomes in developing countries.

2. Materials and Methods

This bibliometric analysis was conducted to explore research trends, collaborative networks, and keyword trends in parent-adolescent communication on sexual and reproductive health (SRH). The research procedure and method used are shown in **Figure 1**, including the first

stage of literature search strategies, the second stage is data collection, extraction and analysis, the third stage is bibliometrics analysis, and the last stage is synthesis and interpretation.

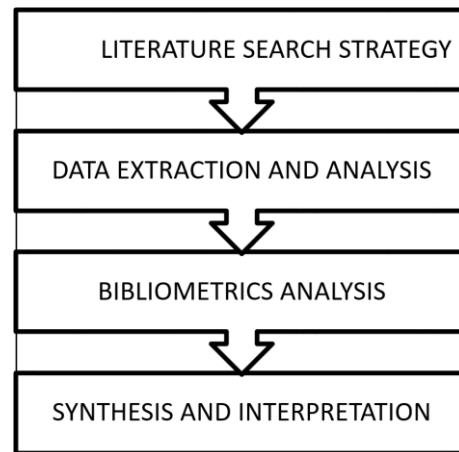


Figure 1. Research procedure and method

2.1. Literature Search Strategy

The data utilized the Web of Science (WoS) Core Collection database, a widely recognized and utilized scientific publishing and research platform [15]. The search rule is “parent-adolescent communication” AND “sexual and reproductive health”. The search was limited to articles published between 2010 and 2024 to capture a comprehensive range of relevant literature.

2.2. Inclusion Criteria

- Language: Articles published in English.
- Publication Type: Peer-reviewed journal articles and review articles.
- Time Frame: Studies published from 2010 to 2024.
- Focus: Research specifically addressing parent-adolescent communication related to sexual and reproductive health.
- Population: Studies involving adolescents (ages 10-19) and their parents or guardians.

2.3. Exclusion Criteria

1. Language: Articles published in languages other than English.
2. Publication Type: Non-peer-reviewed articles, book chapters, conference proceedings, and grey literature.
3. Time Frame: Studies published before 2010.
4. Focus: Research not directly related to parent-adolescent communication in the context of SRH.

After applying these criteria, 29 relevant documents were identified and included in the analysis.

2.4. Data Extraction and Analysis

The identified documents were exported in the “RIS” format, compatible with various bibliometric analysis tools. The data extraction focused on capturing essential bibliographic information such as authors, titles, publication years, journals, and keywords.

2.5. Bibliometric Analysis

Bibliometrics involves the quantitative analysis of academic literature using mathematical and statistical methods. It provides insights into research trends, publication patterns, and the impact of scientific works. VOSviewer software was used for the bibliometric analysis of this study. VOSviewer is a powerful tool for creating and visualizing bibliometric networks, including co-authorship, co-citation, and keyword co-occurrence networks [16].

2.6. Journal Analysis

Distribution of Publishers

Table 1 presents the distribution of active publications on parent-adolescent sexual and reproductive health (SRH) communication from 2010 to 2024 across various academic journals. The analysis includes a total of 29 publications. Springer Nature is the most prolific publisher in this domain, contributing eight publications, constituting 27.59% of the total. Elsevier, the Public Library of Science, Taylor & Francis, and Wiley each published three articles, representing 10.34% of the total publications, respectively. Sage has two publications, accounting for 6.90%. Several publishers have contributed a single publication each, making up 3.45% of the total. These publishers include Aosis, BMJ Publishing Group, Dove Medical Press Ltd, Hindawi Publishing Group, MDPI, the National Medical Association, and UNISA Press. This distribution underscores the diverse interest and broad engagement of various publishers in the research area of parent-adolescent SRH communication.

Impact Factor of Journals Publishing Relevant Literature

In academic publishing, the top five journals stand out due to their remarkable impact factors and journal citation indicators, solidifying their positions as influential sources of research and dissemination of knowledge. With an exceptional impact factor of 7.6, Markham et al. [17], followed by Guilamo-Ramos et al. [18], and Akers et al. [19] with a commendable impact factor of 5.8, followed by

Mbachu et al. [20] and Ndugga et al. [21], have a noteworthy impact factor of 4.5, which reinforces their contributions to scholarly literature. These leading journals have high impact factors and high journal citation indicators, indicating that they are frequently cited and relevant to researchers (**Table 2**). By consistently providing high-quality content and functioning as reputable platforms for academic work, these journals have become invaluable tools for advancing knowledge in the parent-adolescent SRH communication fields. Academics and researchers equally rely on them for cutting-edge research and insights that influence the future of their respective fields. Besides, some of scholars publish independently and have less contact with other teams. Teams tend to be less connected, and their cooperation is more scattered.

2.7. Synthesis and Interpretation

VOSviewer facilitates the clustering and visualization of bibliometric data, allowing researchers to identify research hotspots and growth trends [43]. By importing the literature data into VOSviewer, the study generated knowledge maps highlighting the subject areas’ overall external characteristics. This visualization aids in understanding the evolution of research themes and identifying key areas of focus within the field of parent-adolescent SRH communication.

Table 1. Active publications journals of parent-adolescent SRH communication from 2010-2024 (N=29)

Publishers	Frequency	%
Springer Nature	8	27.59
Elsevier	3	10.35
Public Library Science	3	10.35
Taylor & Francis	3	10.35
Wiley	3	10.35
Sage	2	6.90
AOSIS	1	3.45
BMJ Publishing Group	1	3.45
Dove Medical Press Ltd	1	3.45
Hindawi Publishing Group	1	3.45
MDPI	1	3.45
Natl Med Assoc	1	3.45
UNISA Press	1	3.45

Table 2. Details of selected articles on parent-adolescent SRH communication (N=29)

Authors	Journal impact factor	Journal citation Indicator
Markham et al. [17]	7.60	2.14
Akers et al. [19]	5.80	1.25
Guilamo-Ramos et al. [18]	5.80	1.25
Ndugga et al. [21]	4.50	1.11
Mbachu et al. [20]	4.50	1.11
Silva et al. [22]	4.40	1.22
Wudineh et al. [23]	4.00	0.80
Coetzee et al. [24]	3.80	1.04
Bhatta et al. [5]	3.70	0.91
Noe et al. [25]	3.70	0.91
Mekie et al. [3]	3.60	1.11
Munea et al. [26]	3.50	1.13
Yibrehu & Mbwele [27]	3.40	0.84
Usonwu et al. [28]	3.40	0.84
Muhwezi et al. [29]	3.40	0.84
Coakley et al. [30]	3.30	0.79
Mehus et al. [31]	3.10	1.13
Chaparro Buitrago & Pimentel [32]	2.90	0.72
Adam et al. [33]	2.79	0.73
Leyser-Whalen & Jenkins [34]	2.60	1.36
Vongsavanh et al. [35]	2.60	0.69
Kemigisha et al. [36]	2.47	0.80
Al-Zaabi et al. [37]	1.90	0.81
Donoghue et al. [38]	1.90	0.81
Nelson et al. [39]	1.80	0.60
Masresha & Alen [40]	1.30	0.31
Aliyu & Aransiola [4]	1.30	0.30
Jain & Singhal [41]	0.60	0.18
Mavhandu-Mudzuhu & Mhongo [42]	0.30	0.12

3. Results

3.1. Publication Trends

Publication trends highlight the changing patterns in research over time, including the number of articles, shifts in topics, and changes in authorship. They also reveal popular journals, geographic research distribution, funding sources, new methods, and citation frequency. Understanding these trends helps researchers and institutions stay updated, allocate resources, and recognize emerging interests.

From 2010 to 2024, the distribution of publications on

parent-adolescent sexual and reproductive health (SRH) communication shows a fluctuating but generally increasing trend. In 2024, two publications made up 6.90% of the total, while 2023 saw a significant increase with six publications (20.69%). In 2022, there were two publications (6.90%), and in 2021, there were five (17.24%). The peak year was 2020, with seven publications (24.14%). Other years had fewer publications: 2019, 2018, 2015, 2011, and 2010 each had one publication (3.45% each), and in 2014, there were two publications (6.90%).

Figure 2 shows two metrics related to parent-adolescent SRH communication research from 2010 to 2024: the

annual publication counts and the cumulative research output. The annual publication count illustrates research output, highlighting trends or changes in frequency. The cumulative research output tracks the overall volume of research over time. Together, these metrics provide a comprehensive view of the volume and development of research in this field.

Table 3 categorizes the publication types on parent-adolescent SRH communication. Out of 29 publications, 25 are research articles (86.21%), representing original studies. There are four review articles (13.79%) that analyze and synthesize existing literature.

This categorization highlights the predominance of original research and the significant role of review articles in expanding knowledge in this field.

3.2. Authorship Patterns

In academic discourse, 140 authors have contributed to the literature on parent-adolescent SRH communication research. **Table 4** highlights the leading scholars in this field, delineating their contributions based on record count and the percentage of total publications.

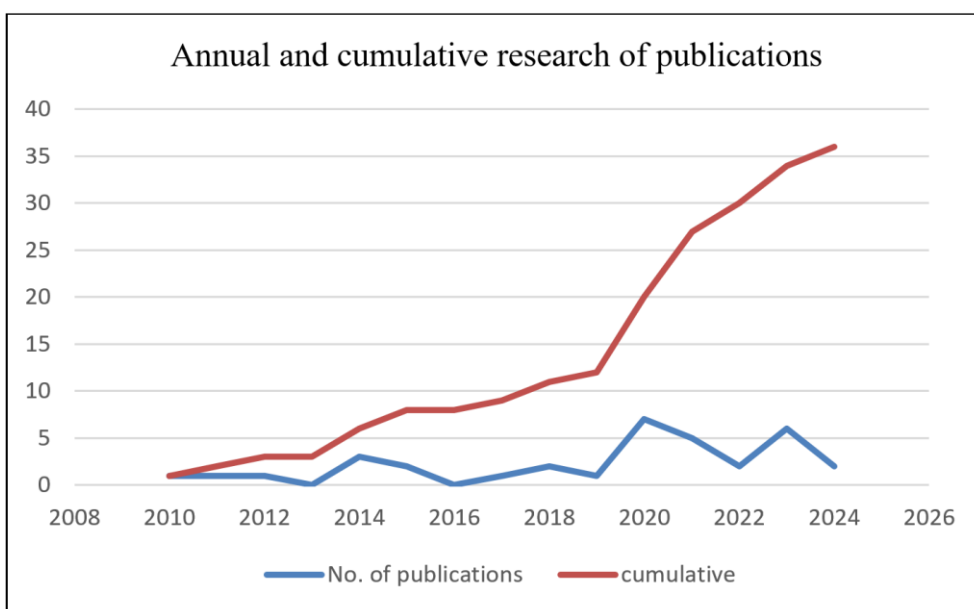


Figure 2. Annual publications and cumulative research citations

Table 3. Number of document types (N=29)

Document Types	Frequency	%
Article	25	86.21
Review Article	4	13.79
Total	29	100.00

Table 4. Lead authors in parent-adolescent SRH communication research

Authors	Frequency	%
Kemigisha E	2	6.90
Nyakato VN	2	6.90
Achen D	1	3.45
Adam ND	1	3.45
Addisu D	1	3.45
Ado AL	1	3.45
Agu C	1	3.45
Agu IC	1	3.45
Agyei FB	1	3.45
Ahmad R	1	3.45

Collaboration Patterns

The 140 authors were categorized into 28 clusters, with the largest comprising 12 authors showcasing their collaborative patterns. A visual representation in the form of a figure illustrates the co-authorship network within the parent-adolescent sexual and reproductive health (SRH) communication research field (**Figure 3**). The search was limited to articles published between 2010 and 2024 to capture a comprehensive range of relevant literature within this period. The clusters are distinguished by different colours, denoting groups of authors who frequently collaborate. The visualization unveils discernible collaboration patterns, with most interactions occurring within these clusters, indicating focused research teams or projects. However, inter-cluster connections also suggest interdisciplinary collaboration and exchanging ideas across various research groups. Noteworthy authors situated in the red cluster, including Kemigisha, Rai, Nyakato, Ivanova [36], Fernades, Kemigisha, Achen, Akatuksawa, Ruzaaza, Coene, Delobelle, Michielsen, and Mlahagwa

[44] are centrally positioned within their clusters, underscoring their significant role and extensive collaboration networks. Furthermore, the diversity of author names implies a global distribution of researchers, emphasizing the worldwide interest and cooperative efforts in this research domain. This co-authorship analysis is indispensable for comprehending the research community's structure, identifying key researchers and potential collaborators, and acknowledging influential research groups within the parent-adolescent SRH communication field.

The red cluster, featuring Kemigisha [36] and Coene [44], highlights strong collaborative ties and suggests a highly active research group, with its placement in the recent years' colour spectrum indicating ongoing and significant contributions, as shown in **Figure 3**. The spread of clusters and the interconnectedness of nodes illustrate a diverse and collaborative research environment, with multiple clusters representing different research groups and interlinkages indicating cross-group collaboration.

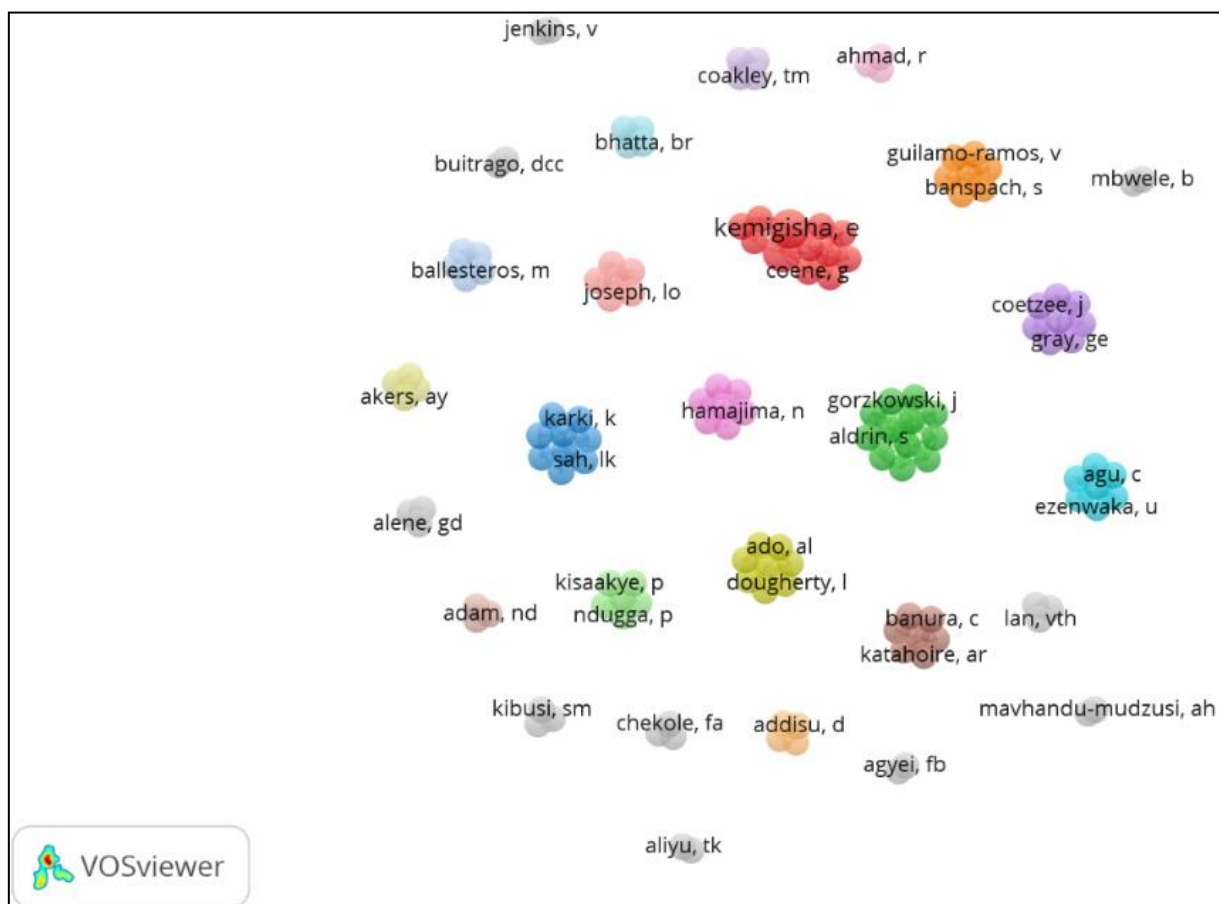


Figure 3. Visualizing of co-authorship network

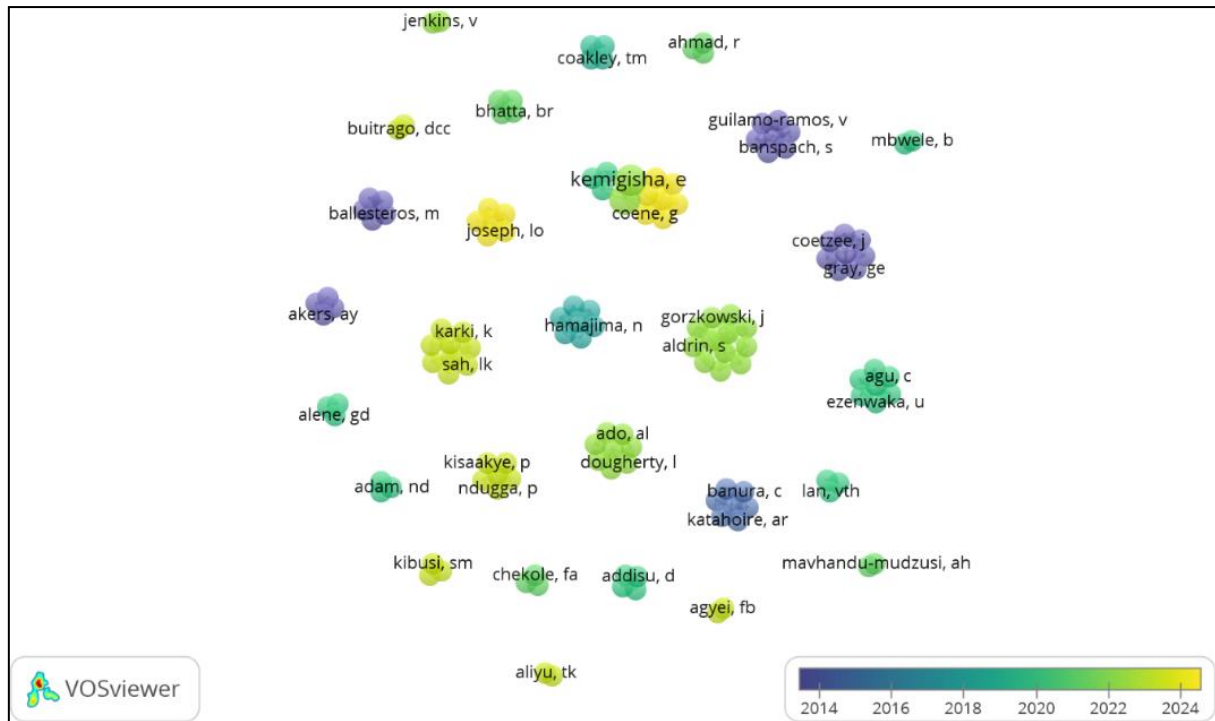


Figure 4. Evolution of collaboration over time

Temporal Collaboration Pattern

The VOSviewer visualization represents a network of authors based on their co-authorship and research activity from 2014 to 2024, indicated by a colour gradient from purple (early years) to yellow (latest years), as shown in **Figure 4**. Early authors, such as Ballesteros [39] and Akers [19], depicted in purple, were foundational in their fields, initiating key research topics and collaborations. Mid-period authors, represented in green, like Karki [45] and Ndugga [21], built on this early work between 2017 and 2020, increasing collaboration and publication output. Recent authors, shown in yellow, such as Addisu [3] and Agu [20], are at the forefront of current research, driving innovation and introducing new methodologies. Larger clusters, such as those around Kemigisha [36], indicate robust collaboration networks, while smaller clusters suggest niche research areas or individual contributions. The progression from purple to yellow within clusters highlights the evolution and expansion of collaborative networks over time. This visualization captures the growth of research topics from early foundations through mid-period expansion to recent advancements, demonstrating how different authors have contributed to and shaped their respective fields. Authors appearing across different periods, like Kemigisha [36], reflect sustained influence and extensive collaboration, showing their ongoing impact on the field.

3.3. Citation Analysis

Table 5 analyses the primary citation topics in

parent-adolescent SRH communication, highlighting the distribution of research focus across different areas. HIV is the most frequently cited topic, with 18 records accounting for 62.07%. This dominant focus underscores the critical importance of addressing HIV-related issues within the context of parent-adolescent SRH communication, reflecting the ongoing public health priority of HIV prevention and education. Psychiatry & Psychology is the second most cited category, comprising seven records or 24.14% of the total, indicating substantial interest in the psychological aspects of SRH communication, including the mental health and behavioural implications for adolescents. Fertility, Endometriosis & Hysterectomy is cited in 2 records, making up 6.90% of the total. This focus area highlights the relevance of fertility-related issues and gynaecological health within the broader SRH communication context. Nursing has only one record, representing 3.45% of the total. This suggests that while nursing is a relevant field, it constitutes a smaller portion of the research focus than other topics.

Table 5. Distribution of meso-level citation topics (N=29)

Citation Topics	Frequency	%
HIV	18	62.07
Psychiatry & Psychology	7	24.14
Fertility, Endometriosis & Hysterectomy	2	6.90
Nursing	1	3.45

3.4. Keyword Analysis

Keywords are the authors' high overview of research

papers, and keyword analysis of research papers in a certain field can quickly locate the research hotspots and frontiers in the field [46]. A total of 29 documents retrieved from the WoS database were imported into VOSviewer. A full counting of title and abstract found 912 keywords with 16 occurrences. However, from 16 occurrences, only 8 occurrences with the most relevant terms were selected with a default choice of 60%, as shown in **Table 6**. The keywords were analyzed by clustering, and the keyword co-occurrence mapping was done in the field of parent adolescent SRH communication, as shown in **Figure 5**.

Table 6. Keywords and terms occurrences (N=29)

Keywords	Occurrences	Relevance
Adolescent	75	1.63
Parent	67	1.55
Parents adolescent communication	58	1.99
Communication	58	0.77
Information	25	0.51
SRH issue	23	1.21
Sex	17	0.84
Child	16	0.97

Table 6 above shows that the term “adolescent” occurs 75 times with a relevance score of 1.63, which suggests that discussions surrounding adolescents are highly pertinent to the field. Similarly, “parent” appears 67 times with a relevance score of 1.55, highlighting the importance of parents in this context. The specific phrase “parents adolescent communication” is noted 58 times and has a high relevance score of 1.99, indicating that this interaction is a critical focus area in the literature.

The visualization from VOSviewer depicts the co-occurrence and relationships between these keywords, with nodes representing the keywords and links illustrating their co-occurrence in the literature. Clusters of nodes indicate groups of terms that frequently appear together, revealing specific themes or focus areas within the research. This analysis provides a comprehensive overview of the key themes and areas of focus in the field, helping researchers to better understand the structure of the research community and facilitating more targeted and impactful studies in parent-adolescent SRH communication.

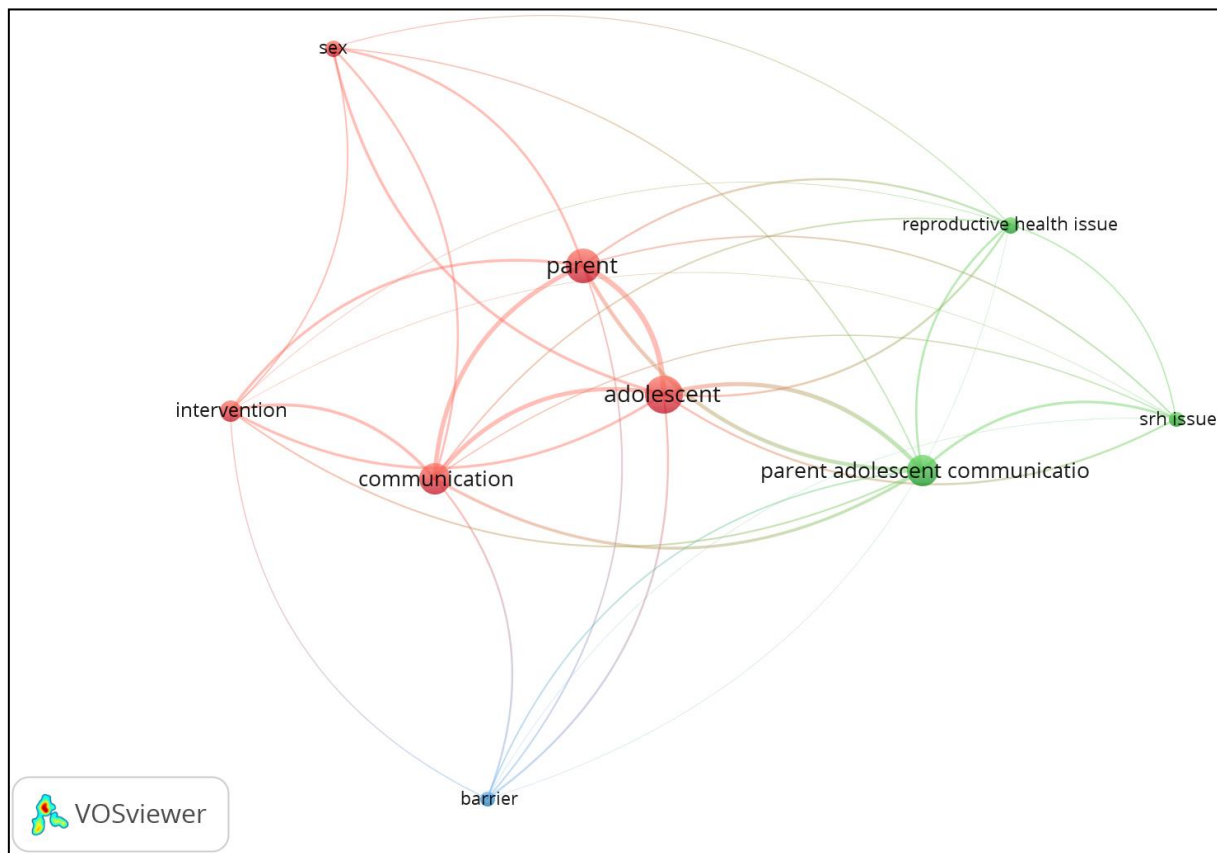


Figure 5. Keywords Co-occurrences Analysis

3.5. Geographical Distribution

The distribution of research publications on parent-adolescent SRH communication by country or region is detailed in **Table 7**, with a total of 29 records analyzed. The United States (USA) leads with eight publications, accounting for 27.59% of the total. This indicates a significant contribution from the USA to the research in this field. Ethiopia follows with five records, representing 17.24% of the publications. Both South Africa and Uganda have contributed four publications each, each making up 13.79% of the total. Canada and England each have three publications, constituting 10.34%, respectively.

Japan, Nigeria, and Tanzania each have two records, accounting for 6.90% of the total. Several countries each contributed a single publication, representing 3.45% individually. These countries are Belgium, Bolivia, Colombia, Côte d'Ivoire, Ecuador, France, Germany, Kenya, Laos, Myanmar, Nepal, the Netherlands, Nicaragua, Niger, Norway, Scotland, Togo, and Vietnam. This distribution highlights the global interest and research activity in parent-adolescent SRH communication, with notable contributions from both developed and developing countries, reflecting a wide geographical scope and diverse cultural contexts in the study of this important field (**Table 7**).

Table 7. Geographical distribution of research publications (N=29)

Countries/Regions	Frequency	%
USA	8	27.59
Ethiopia	5	17.24
South Africa	4	13.79
Uganda	4	13.79
Canada	3	10.35
England	3	10.35
Japan	2	6.90
Nigeria	2	6.90
Tanzania	2	6.90
Belgium	1	3.45
Bolivia	1	3.45
Colombia	1	3.45
Cote Ivoire	1	3.45
Ecuador	1	3.45
France	1	3.45
Germany	1	3.45
Kenya	1	3.45
Laos	1	3.45
Myanmar	1	3.45
Nepal	1	3.45
Netherlands	1	3.45
Nicaragua	1	3.45
Niger	1	3.45
Norway	1	3.45
Scotland	1	3.45
Togo	1	3.45
Vietnam	1	3.45

Affiliation

Table 8. Leading affiliations in parent-adolescent SRH communication research

Affiliations	Frequency	%
Bahir Dar University	2	6.90
Centers For Disease Control Prevention USA	2	6.90
Duke University	2	6.90
Makerere University	2	6.90
Mbarara University Of Science Technology	2	6.90
University Of Gondar	2	6.90
University Of North Carolina	2	6.90
University Of Teesside	2	6.90
University Of Tokyo	2	6.90
African Population Health Research Centre	1	3.45

Table 8 above shows the top 10 affiliations in parent-adolescent sexual and reproductive health (SRH) communication research highlight a diverse and globally distributed set of institutions. Notable contributors include Bahir Dar University and the University of Gondar from Ethiopia, Makerere University and Mbarara University of Science and Technology from Uganda, and the Centres for Disease Control and Prevention (CDC) in the USA. Duke University and the University of North Carolina are also featured, reflecting strong research efforts in the United States. The University of Teesside in the UK and the University of Tokyo in Japan represent significant European and Asian contributions, respectively. Additionally, the African Population Health Research Centre underscores the role of specialized research institutions. These affiliations demonstrate a global and interdisciplinary commitment to advancing SRH communication research, informing policy, and improving practices for adolescent health.

3.6. Citation Metrics

The distribution of records indexed by the Web of Science for research on parent-adolescent sexual and reproductive health (SRH) communication is summarized in the table, highlighting three specific indices. The Social Sciences Citation Index (SSCI) has the highest representation, with 20 records, accounting for 68.97% of the total 29 publications. This indicates that a significant portion of the research in this area is recognized within the social sciences, reflecting the interdisciplinary nature and

the social implications of parent-adolescent SRH communication. The Science Citation Index Expanded (SCI-EXPANDED) includes 18 records, which constitute 62.07% of the total publications. This substantial representation suggests that the research also has a strong presence in the broader scientific community, encompassing various scientific disciplines that intersect with SRH communication. Lastly, the Emerging Sources Citation Index (ESCI) includes three records, making up 10.35%. This index covers newer or less-established journals that nonetheless contribute to the body of knowledge in this field, indicating the ongoing development and expansion of research in parent-adolescent SRH communication (**Table 9**).

Table 9. Web of Science index (N=29)

Web of Science Index	Frequency	%
Social Sciences Citation Index (SSCI)	20	68.97
Science Citation Index Expanded (SCI-EXPANDED)	18	62.07
Emerging Sources Citation Index (ESCI)	3	10.35

*multiple indexing

3.7. Topic Evolution

From 2010 to 2024, research themes in parent-adolescent sexual and reproductive health (SRH) communication have evolved significantly, reflecting shifts in societal concerns and research priorities. Initially, studies from 2010 to 2019 focused heavily on the dynamics of communication between parents and adolescents, particularly concerning sexuality, with keywords like “communication,” “parent-adolescent communication,” and “sex-related topics” dominating the discourse. By 2020, the focus broadened to encompass SRH more generally, highlighting the critical role of SRH in the overall health and well-being of adolescents. This shift was driven by a growing awareness of young people's specific needs and challenges. From 2021 onwards, the research scope expanded further to include “information” and “child-related topics,” indicating a deeper exploration of various sources of information available to adolescents and a broader examination of issues related to children's well-being within the context of parent-adolescent relationships (**Figure 6**). This evolution highlights how researchers adapt their focus to address the changing needs of young individuals and families, ensuring that research remains relevant and impactful in addressing current issues in sexual and reproductive health communication.

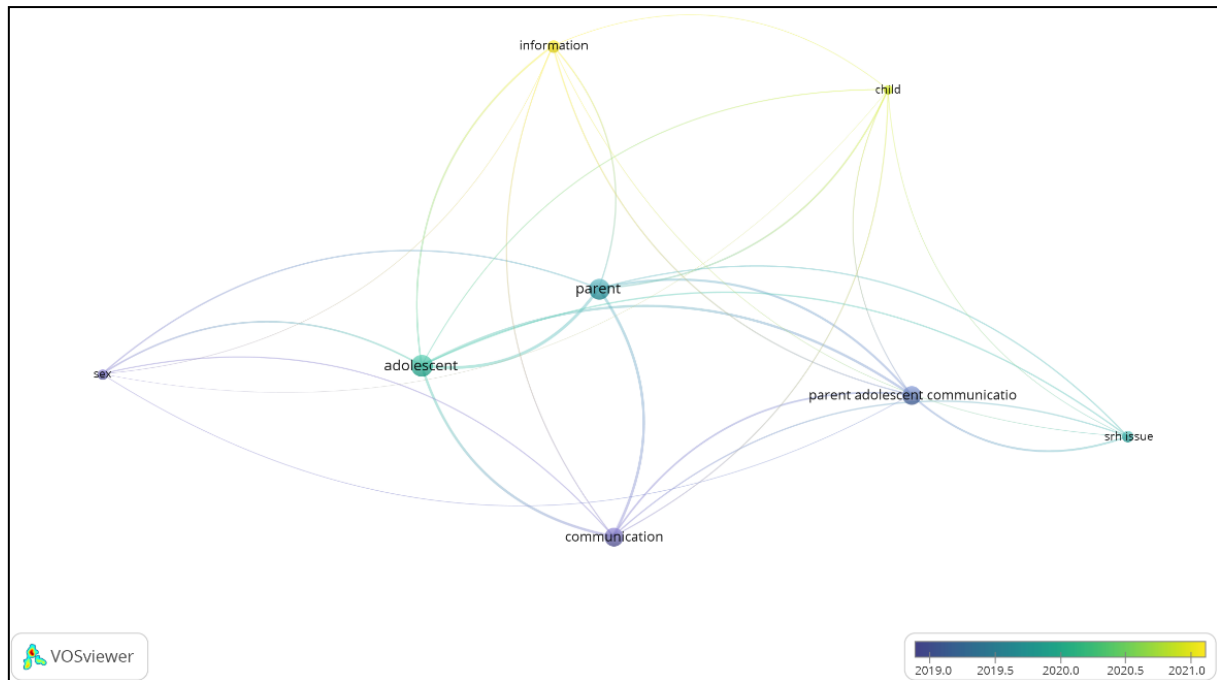


Figure 6. Map of topic evolution of parent-adolescent SRH communication documents over time

3.8. Sustainable Development Goals in Parent-Adolescent SRH Communication Research

This evolution highlights how researchers adapt their focus to address the changing needs of young individuals and families, ensuring that research remains relevant and impactful in addressing current issues in sexual and reproductive health communication. Most research publications in parent-adolescent SRH communication focus on SDG 3: Good Health and Well-Being, with 26 out of 29 publications (89.66%) aligning with this goal. This emphasis reflects the significant attention paid to improving health outcomes and ensuring access to SRH information and services for adolescents and their families. Additionally, SDG 5: Gender Equality is represented by two publications (6.90%) highlighting efforts to address gender disparities and promote equality in SRH education and access to healthcare. However, another publication was not classified in any SDG. Overall, the focus on these SDGs underscores the importance of advancing adolescent health and rights within the broader framework of sustainable development (Table 10).

Table 10. Sustainable development goal in parent-adolescent SRH communication (N=28)

Sustainable Development Goals	Frequency	%
03 Good Health and well-being	26	89.66
05 Gender Equality	2	6.90

4. Discussion

The study provides a comprehensive overview of the

evolving landscape in parent-adolescent SRH communication research over a 14-year period. The research sheds light on key trends, collaborative networks, and thematic shifts within this field from 2010 to 2024 by employing a bibliometric analysis using the WoS Core Collection database.

One of the study's central findings is the noticeable shift in research focus over time. In the earlier years, particularly around 2019, research heavily concentrated on communication dynamics between parents and adolescents. However, by 2020, there was a marked transition towards addressing more direct adolescent SRH issues. This shift may reflect the growing recognition of the urgent need to address adolescent-specific SRH challenges, possibly driven by rising concerns about mental health, HIV prevention, and risk behaviours among adolescents. The increased focus on these areas aligns with global public health priorities, underscoring the significance of timely and effective communication between parents and adolescents on these sensitive topics.

The involvement of prominent institutions such as Bahir Dar University, the Centres for Disease Control and Prevention (USA), and Makerere University further emphasizes the global nature of this research area. These institutions' active participation in collaborative networks suggests that international cooperation is vital for advancing knowledge and developing effective interventions.

Moreover, identifying highly active research groups, with individuals like Kemigisha and Nyakato [36] playing central roles, points to influential figures driving research in this domain. These researchers and their networks are likely instrumental in shaping the research agenda and

advancing our understanding of effective communication strategies regarding SRH between parents and adolescents.

The study's use of VOSviewer software to visualize co-authorship networks, keyword trends, and research hotspots offers a valuable method for mapping the intellectual structure of the field [43]. The growing interest in topics such as HIV prevention and mental health, as indicated by keyword trends, suggests that future research may continue to delve deeper into these areas, potentially uncovering new insights and informing policy development.

4.1. Policy Implications

To enhance the impact of research in parent-adolescent sexual and reproductive health (SRH) communication and improve health outcomes for adolescents globally, several critical policy implications should be considered. Firstly, fostering international collaboration is crucial; policy-makers and funding agencies can achieve this by encouraging and facilitating international research partnerships through grants, joint research programs, and international conferences that unite researchers from diverse regions and disciplines. Additionally, it is essential to support key researchers and research groups by identifying and providing targeted funding and resources to central figures and highly active research teams, thereby boosting the overall productivity and impact of research in this field. Promoting knowledge exchange is another critical step, which can be accomplished by establishing platforms and networks for disseminating research findings and best practices across different regions through online databases, webinars, and collaborative workshops. Furthermore, given the evolving nature of research in parent-adolescent SRH communication, encouraging and supporting long-term longitudinal studies would help to understand the changing dynamics over time. Lastly, integrating cross-cultural perspectives into research policies is vital to ensure that interventions and communication strategies are culturally sensitive and effective in various contexts. Implementing these policy recommendations will significantly enhance research impact in this field, improving adolescent health outcomes worldwide.

4.2. Limitations of Analysis

While VOSviewer is a powerful tool for bibliometric analysis, providing valuable insights into collaborative networks and research trends in parent-adolescent sexual and reproductive health (SRH) communication, it has several limitations. Firstly, the study relies solely on the Web of Science (WoS) Core Collection database, which restricts the breadth of analysis by excluding relevant studies indexed in other databases such as PubMed, Scopus, or Google Scholar, potentially resulting in an incomplete representation of the research landscape. This reliance also introduces a language bias, as WoS primarily

indexes English-language journals, underrepresenting important research published in other languages. Additionally, the analysis covers publications from 2010 to 2024, potentially missing foundational studies published before 2010. The quality of the analysis depends on the accuracy of WoS metadata, and inconsistencies can affect reliability.

Furthermore, grey literature such as reports, theses, and conference papers are excluded, which may contain significant insights not captured in peer-reviewed articles. VOSviewer focuses on co-authorship and citation networks but does not capture other important dimensions, such as methodological diversity or theoretical frameworks. The dynamic nature of the field means the analysis represents a snapshot in time and may not fully capture the latest developments. Lastly, interpreting clusters and networks generated by VOSviewer can be subjective, requiring careful interpretation by domain experts. Despite these limitations, VOSviewer provides valuable insights, and future studies could integrate multiple databases and grey literature to offer a more comprehensive understanding of the field.

5. Conclusions

This bibliometric analysis, conducted using VOSviewer and focusing on parent-adolescent sexual and reproductive health (SRH) communication research, reveals significant trends and collaborative networks from 2010 to 2024. The study highlights evolving research interests, particularly the shift towards adolescent SRH and the inclusion of broader topics such as information dissemination and child well-being. While the analysis provides valuable insights, it is limited by its reliance on a single database (WoS), potential language bias, and exclusion of grey literature. Future research should integrate multiple databases and consider a wider range of publications for a more comprehensive understanding. Policy-makers and practitioners can use these findings to identify key research areas and foster international collaboration to address emerging SRH challenges effectively.

Acknowledgements

We gratefully acknowledge the funding Universiti Malaysia Sarawak (UNIMAS) provided to support this research (Research ID: UNI/F05/VC-HIRG/85492/P05-03/2022). The authors also sincerely thank the UNIMAS authorities for their continuous support and encouragement throughout this study.

Funding

This study was funded by the Vice Chancellor High Impact Research Grant (VC-HIR-G) (Research ID:

UNI/F05/VC-HIRG/85492/P05-03/2022).

Conflict of Interest

All authors declare that they have no known financial or personal conflicts of interest concerning any scientific papers cited in this article that could affect the integrity of the research.

Authors' Contributions

The authors of this article were actively involved in various stages of the research process. Rafazila Ramli, Md Mizanur Rahman, and Gerraint Gillan Anak Ahi contributed to drawing research questions, building the search strategy, data extraction, drafting the initial manuscript and finalizing the manuscript for approval. Rasitasam Safii, Jacey Lynn Minoi, Stephanie Chua Hui Li, Ahmad Sofian bin Shminan and Lee Jun Choi participated in drawing research questions, data synthesis and analysis, and final manuscript approval.

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