Review article

A bibliometric and knowledge-map analysis of psychological violence from 2003 to 2022

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ABSTRACT

Background: Psychological violence is a serious global public health and social issue, attracting increasing research. Its adverse effects on individuals and society are significant. Given the negative impacts of psychological violence and the importance of maintaining mental health, we employed a bibliometric analysis of the literature on psychological violence over the past 20 years on a global scale.
Objective: We aimed to elucidate the current research hotspots and development trends in psychological violence using bibliometrics and a visualization analysis, and provide ideas for related research.
Methods: We searched three databases in the Web of Science Core Collection to obtain data from January 1, 2003, to December 31, 2022, and utilized VOSviewer, CiteSpace, and Scimago Graphica software to visualize authors, journals, countries, institutions, and collaboration and keyword networks.
Results: Ultimately, 4,387 publications related to psychological violence were identified; the top three countries for the number of publications were the United States, England, and Canada, in that order; The top three institutions were the University of Toronto, King's College London, and Columbia University. Of 15,681 authors, the average publication rate was 0.28 articles per author, with Rodriguez-Carballeira A from Spain publishing the most articles; The top three disciplinary distributions were psychiatry, family Studies, and clinical psychology; Research hotspots included causes, harms, evaluation strategies, and interventions related to psychological violence.
Conclusion: The increasing number of publications suggests greater interest among researchers in the interconnected domains of psychological violence, with the ongoing research reflecting stability and maturity. The current research focus is on the risk factors, manifestations, and consequences of psychological violence. In the future, potential emerging research trends include exploring measurement methods for psychological violence and identifying mitigation strategies. The global community has developed a well-established foundation for cooperation. However domestic research is lacking, indicating the need for enhancement and increased collaboration among researchers, institutions, and countries.

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1. Introduction

Psychological violence refers to injurious behaviors that target an individual's self-esteem, psychological and mental health through verbal aggression or other non-physical aggression [1,2]. This spectrum of behaviors includes, but is not limited to,: restraint, degrading actions, humiliation, threats, intimidation, discrimination, isolation, and other intangible forms of neglect, indifference, or hostile treatment [3] Psychological violence has consistently been recognized as a grave global public health issue [4]. The World Health Organization's (WHO) Violence and Health Report published in 2002 emphasizes the importance of addressing not only the overtly harmful physical violence but also the insidious harm caused by psychological violence [5]. Research has established a significant correlation between psychological violence and a range of adverse outcomes, including attachment disorders, developmental and educational challenges, socialization difficulties, disruptive behaviors, and psychopathology [6,7]. For individuals, psychological violence can erode self-esteem and social efficacy, and may lead to mental health issues, causing anxiety, depression, low self-esteem, suicide and other problems. At the societal level, this form of spiritual violence may precipitate broader social issues, including social discord, heightened conflicts and increased violence. In recent years, scholars have increasingly recognized the detrimental impact of psychological violence and have underscored the critical importance of mental health. Consequently, a substantial body of theoretical and empirical research has emerged within the field of psychological violence. Despite this growing interest, there remains a lack of universally accepted definition for psychological violence, with various scholars in different fields employ diverse terminology, such as psychological violence, mental abuse, emotional violence, and psychological abuse [4]. This terminological diversity has complicated the literature review process, which is essential for maintaining the original context of studies. Moreover, the traditional review literature faces limitations in efficiently organizing and objectively summarizing the development of specific research fields across a large time scale. Therefore, there is a pressing need for an objective, quantitative and systematic approach to the statistical analysis of research related to psychological violence.

Bibliometric analysis is a systematic and comprehensive approach that utilizes statistical methods to measure and evaluate data, which plays a crucial role in identifying research hotspots and describing development trends in specific subject domains. This study aims to conduct a comprehensive analysis of the research status and development trends in the field of psychological violence from 2003 to 2022, employing bibliometrics and visual analysis. Our analysis encompasses publications, keywords, countries, institutions, authors, collaborative efforts, and common citations related to psychological violence. We utilized VOS viewer software and Scimago Graphica software to analyze and visualize the data. Furthermore, CiteSpace software was employed to identify research trends and hotspots in the field based on keyword analysis. The outcomes of this study aim to provide scholars in this field with scientific and theoretical guidance, as well as data-driven support and insights for subsequent research and intervention strategies targeting psychological violence [8].

2. Methods

2.1. Search strategy and data source

The Web of Science (WOS) database is a multi-domain comprehensive database, which is also internationally recognized as an authoritative academic database in the field of natural sciences. In this study, three citation index databases, SCI-Expanded, SSCI and CPCI-S in the Web of Science core database were used as the data source. To find the target literature more precisely, we use Boolean logic operators to construct the retrieval expression: Topic (TS)= (psychological-violence) OR TS = (mental-abuse) OR TS = (psychological-maltreatment) OR TS = (emotional-abuse) OR TS = (psychological-abuse), Set the retrieval time span set from January 1, 2003 to December 31, 2022, The search date was 25 July 2023.

Conduct the literature search according to the above search strategy, and screen according to the following criteria: (1) except the
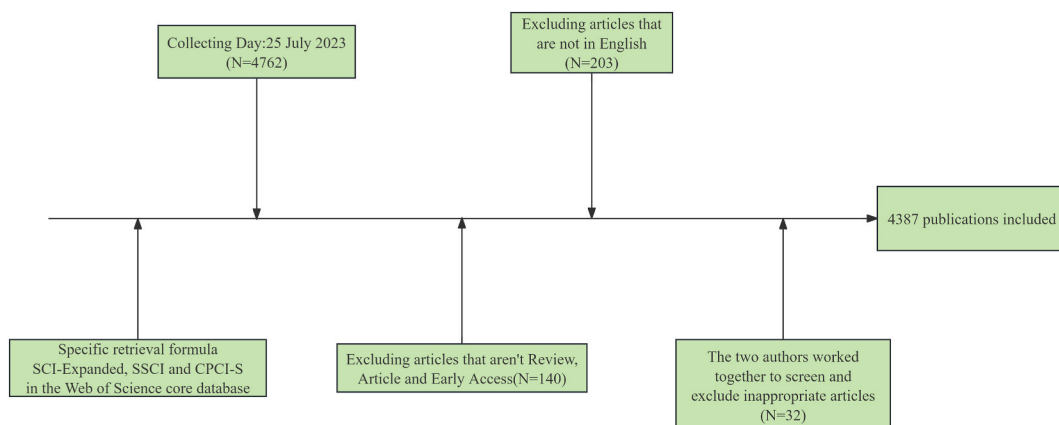

Fig. 1. Flowchart illustrating the process of literature selection.

documents unrelated to the content, only keep the articles with the literature type as "papers, review and published online"; (2) limit the language of the articles to English, and eliminate the other languages of the documents. The literature was independently screened by two authors, 99 % similar. For the uncertain parts, we discussed with the third author in the project. A total of 4387 documents were included (Fig. 1).

2.2. Statistical analysis

The curated literature was exported in two formats: "plain text file" and "tab delimited file". Data analysis was performed utilizing the search results analysis functionality provided by Web of Science platform, with the data subsequently imported into an Excel spreadsheet for advanced analysis. To facilitate visual assessment of the literature, software tools including VOSviewer 1.6.19, CiteSpace 6.2.4, and Scimago Graphica 1.0.36 were employed, specifically for importing the literature in "pure text file" format. These tools were instrumental in analyzing various aspects, such as the publication count, authorship, geographical distribution of contributing countries, publishing entities, citation metrics, and keyword trends. Scimago Graphica 1.0.36 was particularly utilized to generate geographical maps that depict the publication output and collaborative networks among countries. CiteSpace was applied to examine the interrelationships between publishing and citing journals, focusing on research fields and topics, as well as the temporal dynamics and the sustained impact of burst keywords. Moreover, VOSviewer, through its clustering algorithms, provided a comprehensive bibliometric network analysis that detailed the quantities and interconnections of authors, countries, affiliations, and keywords.

Price's Law posits that within a given subject area, the number of key authors is approximately equivalent to the square root of the total number of contributing authors. Through further operation and derivation, the calculation formula is obtained: $M \sim 0.749(N_{max}^{1/2})$. Among them, M indicates the number of articles published by the core authors, and Nmax is the number of articles published by the most scholars in the same field. By extension, scholars whose publication count exceeds *M* are considered core authors within that domain.

3. Result

In the related studies of psychological violence, a total of 4,387 articles were published by 15,681 authors from 4,263 institutions in 122 countries. These papers published in 996 journals cited a total of 124,825 citations from 32,181 journals which included articles, reviews as well as papers published online.

3.1. Growth trend of publications

To a certain extent, the volume of publications and the frequency of citations can serve as indicators of the evolving trajectory and research intensity of a given topic over time. Overall, the amount of research on psychological violence from 2003 to 2022 shows a clear upward trend, and the number of papers issued in the past three years has maintained a high level. As depicted in Fig. 2, the analysis based on Web of Science (WOS) data presents a year-by-year breakdown, where the bar chart delineates the annual publication counts over the past two decades, and the line graph corresponds to the citation counts. The period of 2003–2005 were characterized by a low output of articles; the year 2006 marked the initial period of rapid growth in annual publication numbers. Subsequently, the period from 2018 to 2020 witnessed the most significant surge in annual publication volumes, culminating in a second peak in 2021. In terms of citations, a similar overall upward trend is observed, with a partcularly steep increase from 2018 to 2021. These patterns suggest that the field of psychological violence has garnered substantial scholarly interest over the past two decades and has now reached a more advanced and stable phase of development.
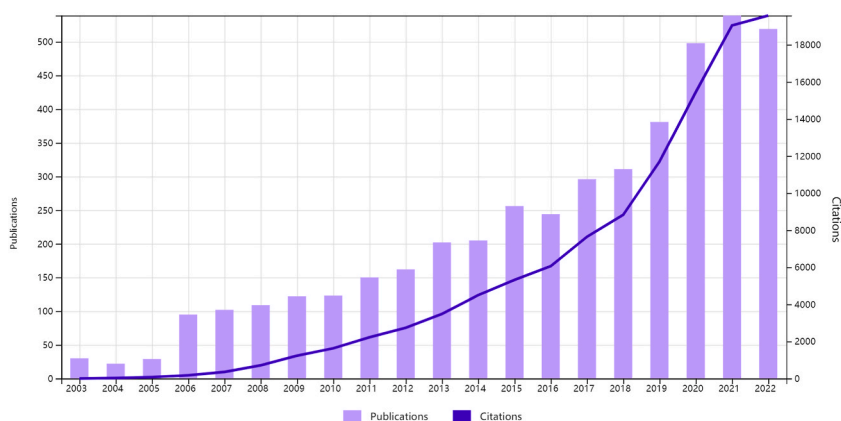

Fig. 2. Annual publication volume and citations from 2003 to 2022.

3.2. Country distribution and partnership analysis

Based on the literature obtained from the WOS database, statistics show that a total of 122 countries have published papers in the field of psychological violence. Among them, the United States has published the most papers, totaling 1,860 papers, accounting for 42.40 %. China published 311 articles, ranking fourth. In terms of the number of citations of the top ten countries, the United States is the first in the total number of citations, totaling 65,217. The number of citations per article is the first in England, which is 39.58. China, with 4718 total citations and 15.17 average citations per article, ranked sixth and tenth among the top 10 countries respectively (Table 1). According to Price's theorem, the 26 countries with more than 32 articles were set as the core issuing countries, and the cooperative network mapping of the 26 countries was drawn (Fig. 3). The majority of high-impact publications worldwide originate from the United States. Furthermore, the primary collaborative relationships among core publishing countries are also centered around the United States. The centrality of the United States is the highest, standing at 0.54.

3.3. Organizations distribution and partnership analysis

The statistics show that a total of 4,263 research organizations are involved in research on the topic of psychological violence. Most of the top 10 organizations in terms of publications are from the United States. The top 3 organizations in terms of the number of publications are the University of Toronto, King's College London, and Columbia University, with 86, 76, and 76 publications in that order (Table 2). Among the top ten organizations, King's College London was the highest cited organizations with 5332 citations and ranked first with 70.16 citations per article. Among the 4263 institutions, a total of 359 institutions have published 7 or more articles, thus considered core publishing institutions, maintaining strong and close working relationships and collaborations. Columbia University stands out with the highest centrality of 0.09, while also being a collaborative partner with numerous institutions. Similarly, Harvard University exhibits the same high centrality, despite having fewer publications, indicating its close collaborations with other institutions. Following closely is the University of Toronto with a centrality of 0.08 (Fig. 4).

3.4. Author distribution and partnership analysis

The statistical analysis reveals that within the domain of psychological violence, there are 15,681 contributing authors, with 31 authors amassing 1,000 times or more citations. The author with the highest number of publications is Rodriguez-carballeira A from Spain, followed by Afifi TO from the University of Manitoba, Canada (Table 3). In accordance with Price's theorem, authors who have published more than four papers are identified as core authors within the field of mental exposure research, numbering 521 in total. A visual representation of their collaborative network illustrates the emergence of a robust core group of scholars (Fig. 5). Co-citing authors are two or more authors who are simultaneously cited in another paper, and these groups of authors thus form a co-citation relationship in which these authors contribute to the subsequent development of the field [9]. The field of psychological violence encompasses a co-cited author network totaling 68,363 individuals. Limiting the authors with more than 28 citations, the co-citation cooperation network of different authors under the field is shown in Fig. 6. The networks connected by different colors delineate clusters composed of distinct authors, providing a nuanced view of the field's intellectual structure.
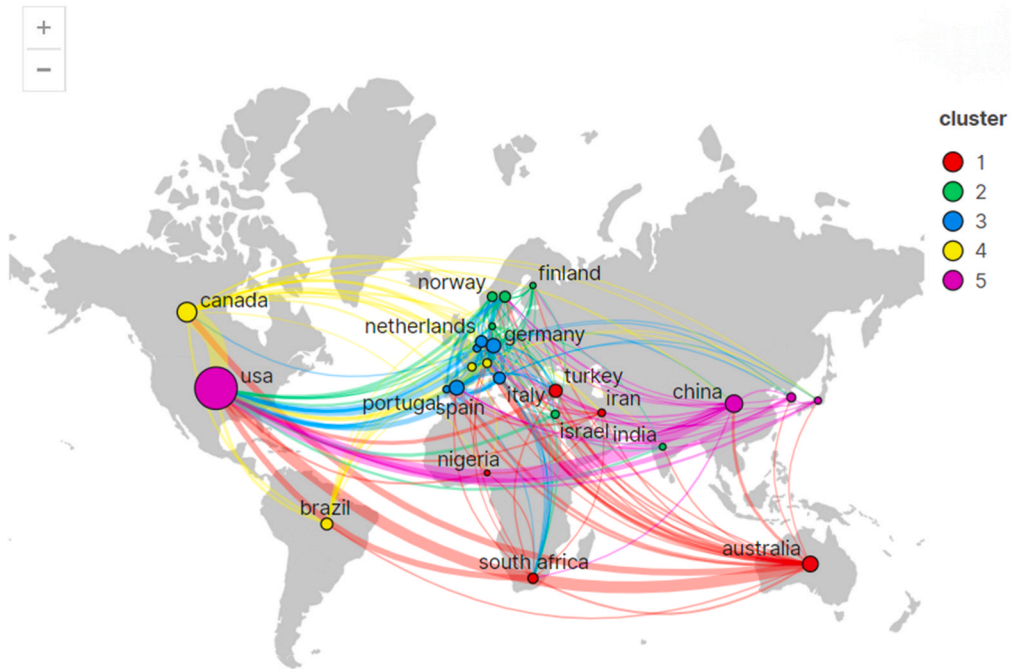
3.5. Journal distribution analysis

A comprehensive statistical analysis was conducted on 996 scholarly publications addressing topics within the realm of psychological violence. The majority of these articles were published in journals based in the United States and the United Kingdom. The three leading journals in terms of publication count were *Child abuse & neglect*, *Journal of interpersonal violence*, and *Journal of family violence*, with 346, 286, and 102 articles in that order, accounting for 16.73 % of the total number of articles on psychological violence in the past 20 years. Among the top ten journals in terms of number of articles, *Psychiatry research* has the highest impact factor of 11.3. This was followed by *Journal of affective disorders* with an impact factor of 6.6. As detailed in Table 4, the journal with the highest average citation frequency of articles related to this topic among the journals listed was *Journal of affective disorders*. Fig. 7 illustrates the core-

Table 1
Publications in the 10 most productive countries.

Rank	Country	TP	TC	TC/TP	Percentage	Centrality
1	USA	1860	65217	35.06	42.40 %	0.54
2	England	433	17139	39.58	9.87 %	0.38
3	Canada	396	12718	32.12	9.03 %	0.08
4	China	311	4718	15.17	7.09 %	0.05
5	Australia	253	8054	31.83	5.77 %	0.14
6	Spain	219	3736	17.06	4.99 %	0.14
7	Germany	209	6867	32.86	4.76 %	0.07
8	Turkey	173	3106	17.95	3.94 %	0.02
9	Brazil	144	3083	21.41	3.28 %	0.01
10	Italy	141	3746	26.57	3.21 %	0.09

TP: Total Publications; TC: Total Citations.

Fig. 3. The visualization map of the core published national cooperative geographic network. Each circle represents a country, with the size of the circle indicating the number of publications. Larger circles correspond to higher publication volumes for that country. The lines between circles represent connections between countries, and the thickness of the lines indicates the level of collaboration; thicker lines denote closer collaborative relationships. Additionally, connections of different colors represent distinct collaborative clusters.

Table 2
Publications in the 10 most productive organizations.

Rank	Organizations	TP	TC	TC/TP	Percentage	Centrality
1	University of Toronto	86	2662	30.95	1.96 %	0.08
2	King's College London	76	5332	70.16	1.73 %	0.06
3	Columbia University	76	2469	32.49	1.73 %	0.09
4	Emory University	70	3310	47.29	1.60 %	0.06
5	University of Washington	64	3067	47.92	1.46 %	0.02
6	University of North Carolina	64	2143	33.48	1.46 %	0.05
7	Harvard University	62	4336	69.94	1.41 %	0.09
8	Yale University	55	2288	41.60	1.25 %	0.07
9	University of Maryland	54	2315	42.87	1.23 %	0.03
10	University of Michigan	52	1470	28.27	1.19 %	0.02

There is an overlap in the output of papers across research organizations due to co-publications.
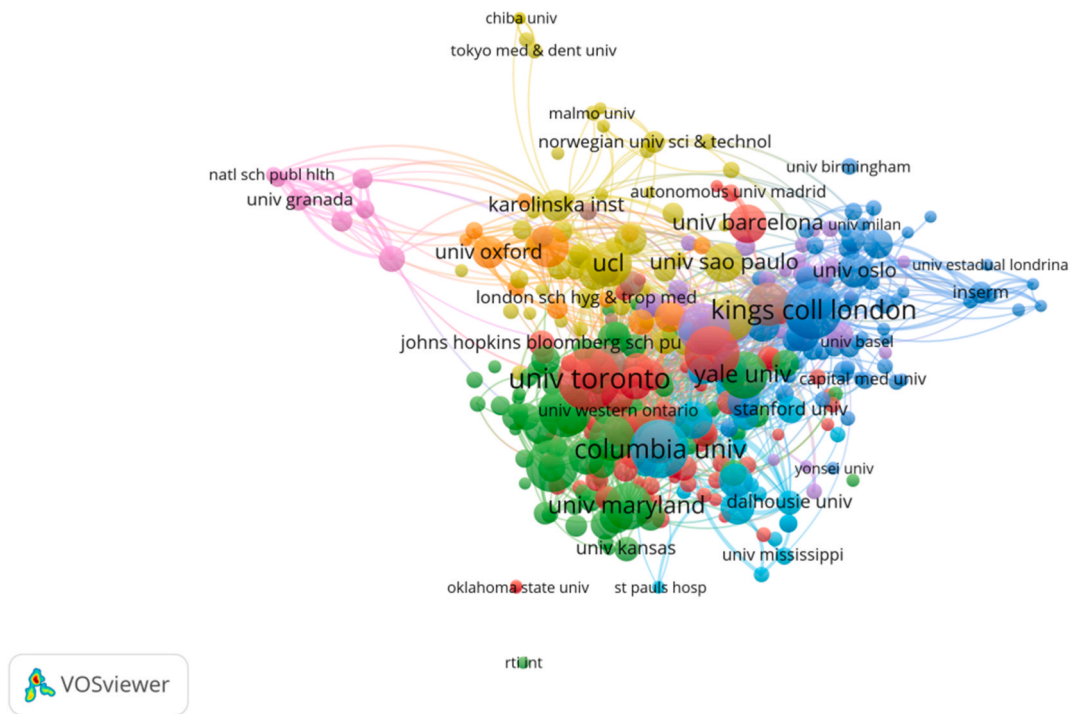TP: Total Publications; TC: Total Citations.

issuing journals, defined as those publishing more than 14 articles, totaling 44 journals. A visual map was constructed to provide a more intuitive representation of the distribution of these core journals.

CiteSpace's dual-map overlay is an efficacious tool for elucidating the disciplinary connections within citation networks. The left side of the overlay represents citing journals, while the right side depicts the foundational map of cited journals. The citation waves are depicted on the basic map, starting from the journals cited on the left and pointing towards the cited side. It can be inferred that the citing side represents the forefront of research over the years, while the cited side represents their knowledge foundation [10]. Accordingly, we have constructed the dual-map overlay depicted in Fig. 8 and applied the z-score function to accentuate robust connections, thereby enhancing readability and identification. The dual-map overlay reveals three primary citation pathways. The cited articles predominantly span clinical psychology within the medical field, as well as public health, psychiatry, and psychology within the social sciences, and education. The scope of the published articles encompasses a diverse array of disciplines, including public health, nursing, psychology, psychiatry, family studies, education, social work, criminology, and criminal law.

3.6. Analysis of subject areas distribution

Data extracted from the WOS database indicate that 4,387 articles pertaining to psychological violence span across 119 distinct

Fig. 4. Map of cooperation network of core organizations. Each circle represents an organization, with the size of the circle indicating the number of publications. Larger circles correspond to higher publication quantities from the respective organization. The lines between circles signify connections between organizations, with the thickness of the lines representing the intensity of collaboration. Thicker lines denote stronger collaborative relationships. Additionally, networks of different colors in the connections represent distinct collaborative clusters.

Table 3
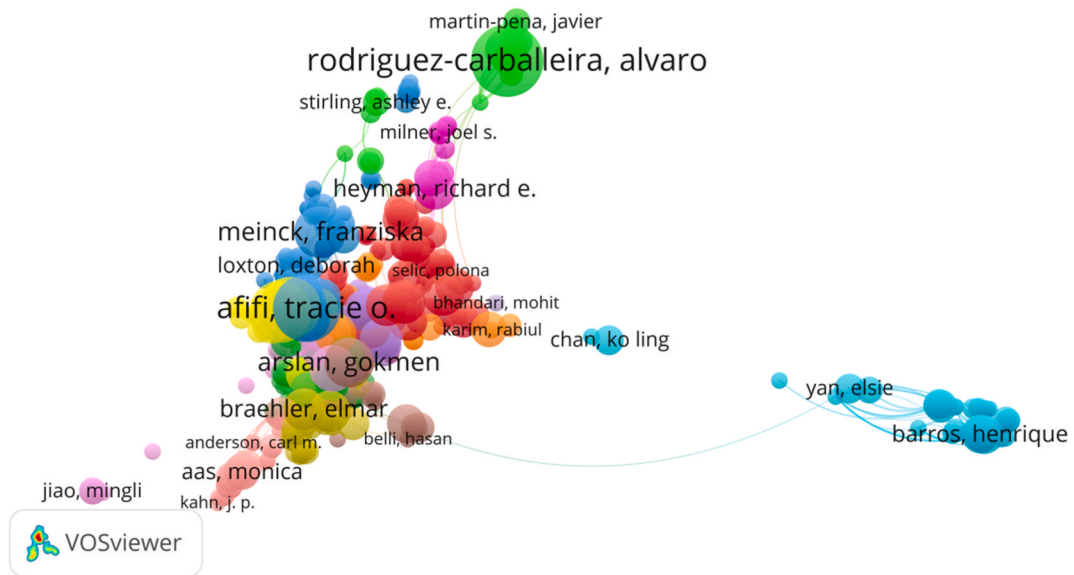Publications in the 10 most productive authors.

Rank	Authors	TP	TC	TC/TP	Percentage
1	Rodriguez-carballeira A	24	354	14.75	0.55 %
2	Afifi TO	22	1651	75.05	0.50 %
3	Strathearn L	20	704	35.20	0.46 %
4	Kisely S	20	407	20.35	0.46 %
5	Meinck F	16	638	39.88	0.36 %
6	Fujiwara T	16	211	13.19	0.36 %
7	Macmillan HL	15	1020	68.00	0.34 %
8	Arslan G	15	371	24.73	0.34 %
9	Baker AJL	14	254	18.14	0.32 %
10	Sareen J	13	1083	83.31	0.30 %

There is an overlap in the output of papers across research authors due to co-publications.
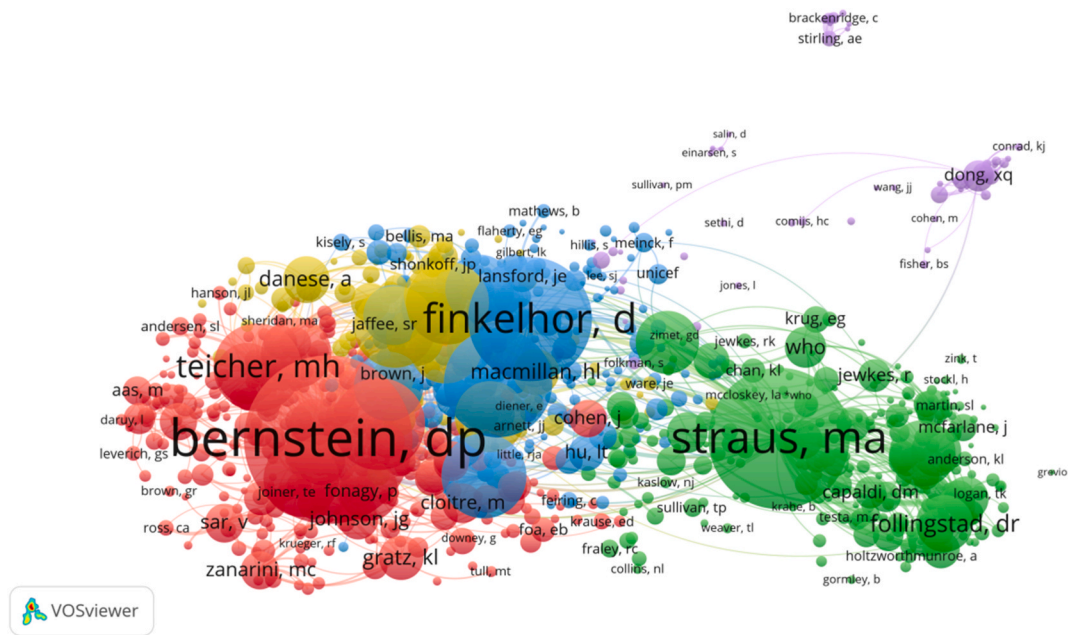TP: Total Publications; TC: Total Citations.

disciplinary topics, with the number of topics exhibiting a continuous upward trend. The five most prevalent subject areas, as delineated in Table 5, are psychiatry, family studies, clinical psychology, social work, and criminology and criminal law.

3.7. Keyword clustering and time analysis

Keywords condense the core and essence of a paper, and keyword analysis can characterize the research hotspots and trends in a certain research field. The research results show that the most frequent keyword in the field of psychological violence is abuse, with a total of 1028 times. As shown in Table 6, according to the price law, keywords that appear more than 25 times are defined as high-frequency keywords, and the top 10 keywords are screened. Then, we analyzed the extracted high-frequency keywords, Fig. 9 shows the main research hotspots of global psychological violence research in the past 20 years. The colors of the nodes in the graph indicate different clusters. The frequency of occurrence of the keywords is indicated by the size of the nodes. The thickness of the lines between the nodes indicates the strength of the association. The results show that Cluster I (red) focuses on the relationship between sexual violence, abuse, and trauma, and is the largest cluster, containing 105 keywords; Cluster II (green) has a total of 85 keywords, and focuses on the relationship between women, violence in intimate relationships, relationship violence, and gender; and Cluster III

Fig. 5. Map of cooperation network of core authors. Each circle represents an author, with larger circles indicating a higher number of published articles by the respective author. The lines between circles represent collaborative connections between different authors, with thicker lines denoting closer collaborative relationships. Different colors represent distinct clusters, and the varying colors in the connection network depict collaborations between different authors.
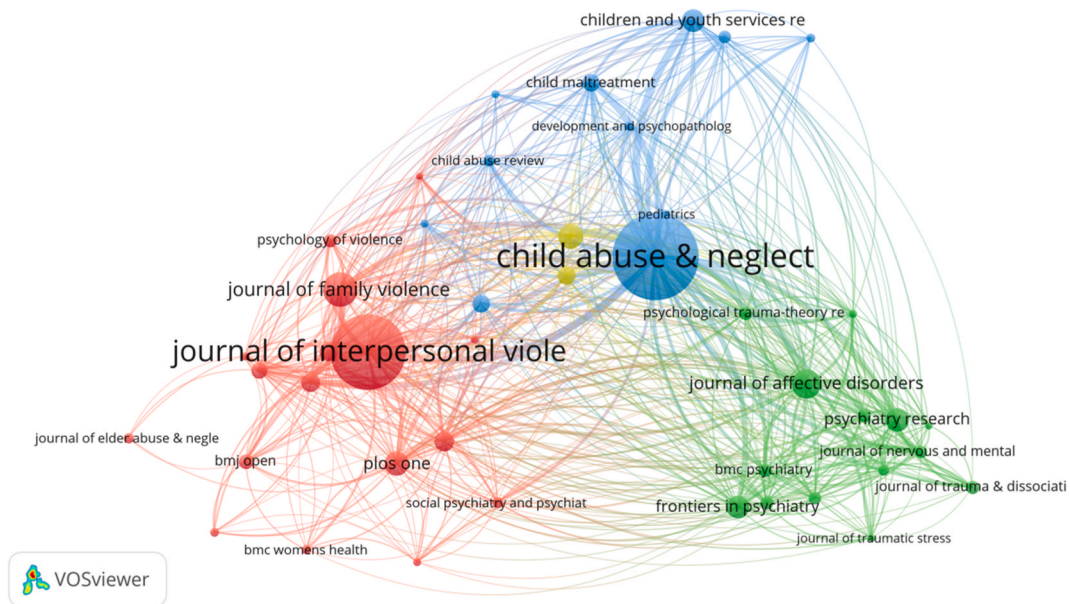

Fig. 6. The visualization map of core co-cited authors. Each circle symbolizes an author, where the circle's size reflects the number of co-citations for the author's published articles. Larger circles indicate a higher co-citation count. Lines between circles denote connections between authors, while distinct color networks highlight collaborative clusters among different authors.

(blue) focuses on the relationship between family, parenting, children, childhood abuse, and childhood verbal abuse; Cluster IV (yellow) covers keywords such as neglect, risk factors, and disease; Cluster V (purple) has keywords focusing on drinking, smoking, drugs, substance abuse, etc.; and Cluster VI (cyan) has only one keyword for the assessment of mental violence. Meanwhile, in order to better show the development process of the study, Fig. 10, a keyword clustering map, was overlaid with the timeline to generate the keyword temporal map. The colors of the nodes and the connecting lines between the nodes showed when the keywords appeared, with the blue keywords appearing earlier than the yellow keywords.
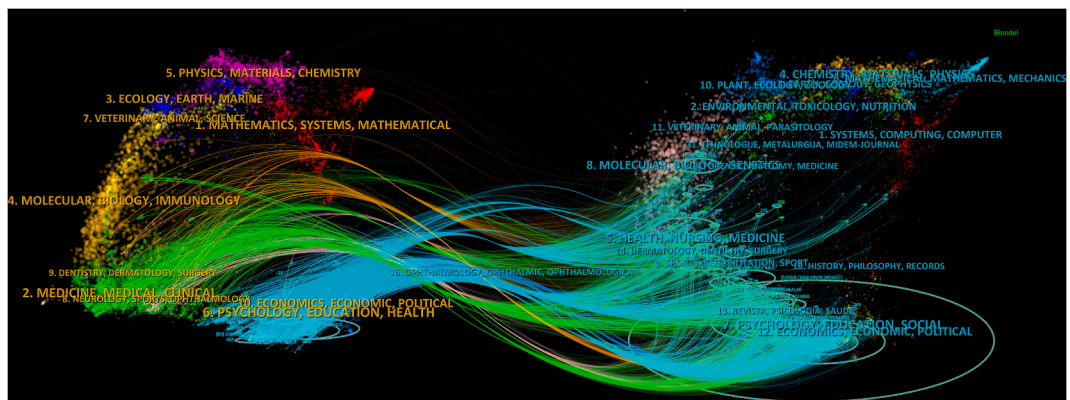
Table 4
Publications in the 10 most productive distribution.

Rank	Journal	TP	TC	TC/TP	IF	Country
1	Child abuse & neglect	346	12035	34.78	4.8	USA
2	Journal of interpersonal violence	286	5231	18.29	2.5	USA
3	Journal of family violence	102	2104	20.63	3.8	USA
4	Journal of affective disorders	82	3913	47.72	6.6	Holland
5	Journal of aggression maltreatment & trauma	66	591	8.95	1.8	England
6	Plos one	64	1693	26.45	3.7	USA
7	Psychiatry research	62	2131	34.37	11.3	Ireland
8	Children and youth services review	60	883	14.72	3.3	England
9	Frontiers in psychiatry	60	689	11.48	4.7	Switzerland
10	Bmc public health	49	1299	26.51	4.5	England

TP: Total Publications; TC: Total Citations; IF: Impact Factor.

Fig. 7. The visualization map of the core published journals. Each circle represents a journal, with the size of the circle corresponding to the number of publications. The lines between circles represent connections between journals, with thicker lines indicating closer collaborative relationships. Different colors denote distinct clusters, and connections of different colors represent collaborations between different journals.

Fig. 8. The dual-map overlay of journals on research of psychological violence. Different colors represent different disciplinary categories, with closer connections between disciplines indicating stronger citation relationships, and vice versa.
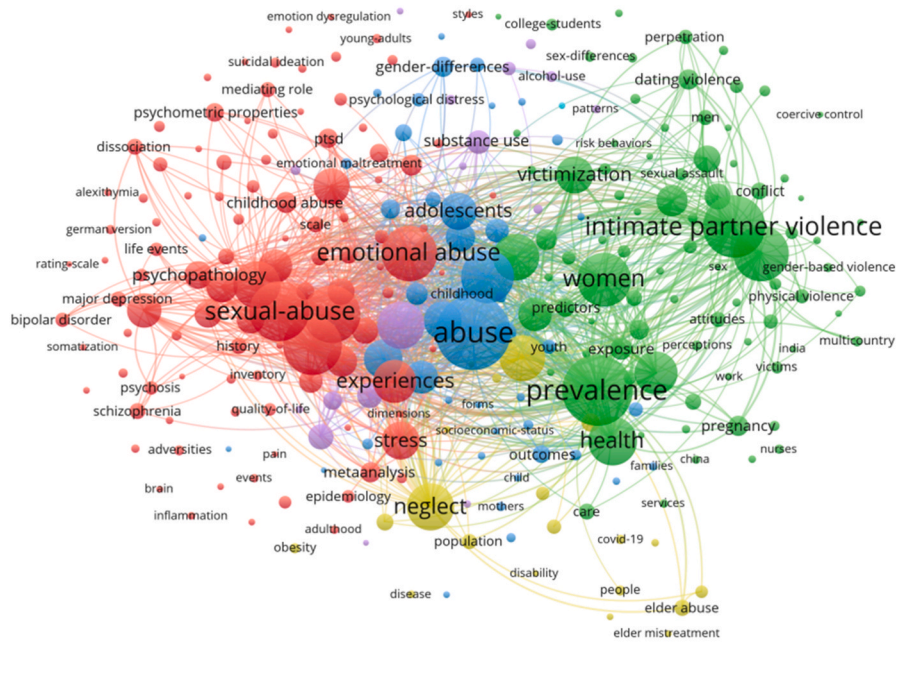
Table 5
Top 10 themes of psychological violence-related studies included in the WOS.

Rank	Subject areas	TP	Percentage	Rank	Subject areas	TP	Percentage
1	Psychiatry	1162	26.49 %	6	Public Environmental Occupational Health	488	11.12 %
2	Family Studies	1094	24.94 %	7	Psychology Social	416	9.48 %
3	Psychology Clinical	619	14.11 %	8	Psychology Applied	331	7.55 %
4	Social Work	596	13.59 %	9	Psychology Multidisciplinary	257	5.86 %
5	Criminology Penology	545	12.42 %	10	Clinical Neurology	196	4.47 %

Due to cross-disciplinary phenomena, the same literature can be attributed to more than one discipline at the same time.
TP: Total Publications.
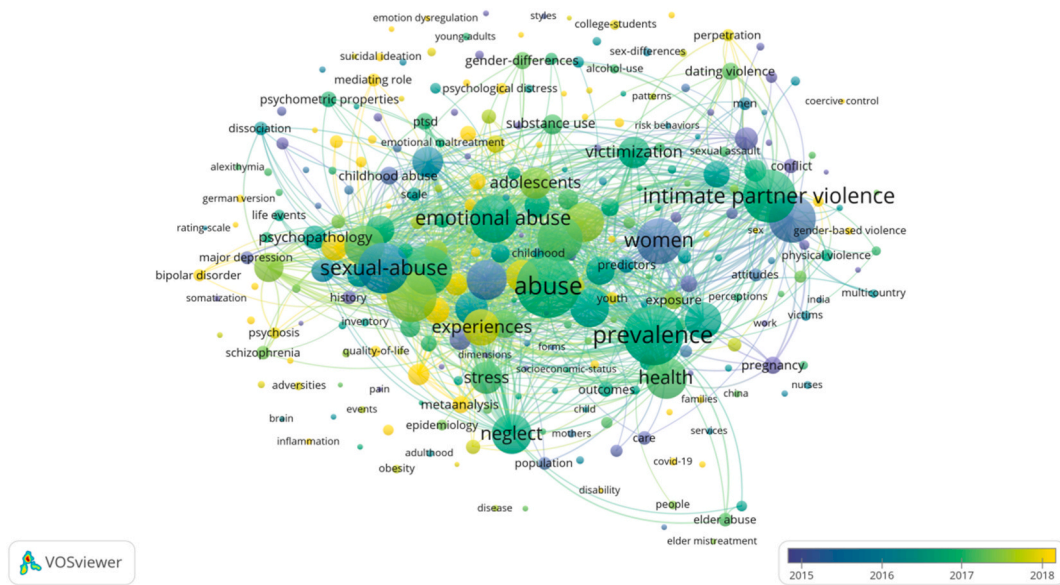
Table 6
The top 10 high-frequency keywords.

Rank	Keywords	Counts	Rank	Keywords	Counts
1	abuse	1028	6	depression	687
2	prevalence	937	7	emotional abuse	652
3	intimate partner violence	786	8	domestic violence	651
4	sexual-abuse	727	9	women	619
5	maltreatment	721	10	risk	614

Fig. 9. The visualization map of the core keyword clustering in the research of psychological violence. The size of each node indicates its frequency of occurrence. Node color represents distinct clusters. The thickness of the lines signifies the strength of connections.

3.8. Keyword burst analysis

Keyword burst analysis involves examining the temporal distribution of keywords frequencies within a researchdomain over a specific time period, This method allows for the identification of keywords that exhibit a sudden increase in frequency, which can then be analyzed to determine the research hotspots, trends, and dynamic shifts in the forefront of the field's development. In order to further clarify the research hotspots of emergence in the field of psychological violence, bursts analysis in Citespace software was used, and a total of 70 emergent words were retrieved. The top 25 keywords based on burst strength were selected and depicted in Fig. 11. The findings reveal that the keyword with the most pronounced burst strength is "Women," while related topics such as "domestic," "gender," "partner," and "sexual violence" are also noted for their high intensity of emergence. Persistent research hotspots in recent years include "childhood," "students," "intergenerational inheritance," and "post-traumatic stress disorder," indicating a growing focus on the student population and the etiology of mental violence and disorders within current research.

Fig. 10. The visualization of the core keyword hotspots and trends of psychological violence. Node size indicates frequency of occurrence, while node color indicates the time of occurrence when keywords appear. Yellow keywords occur later than blue keywords.

Keywords	Year	Strength	Begin	End	2003 - 2022
women	2003	30.89	**2003**	2010	
domestic violence	2003	27.57	**2003**	2012	
physical abuse	2003	15.35	**2003**	2007	
battered women	2003	13.56	**2003**	2012	
sexual abuse	2003	8.01	**2003**	2007	
care	2003	7.69	**2003**	2010	
history	2004	11.73	**2004**	2014	
comorbidity	2005	9.72	**2005**	2010	
psychological abuse	2006	16.74	**2006**	2012	
conflict	2006	15.47	**2006**	2015	
partner violence	2006	9.66	**2006**	2015	
consequences	2006	7.59	**2006**	2012	
attitudes	2009	7.74	**2009**	2013	
predictors	2010	8.92	**2010**	2014	
substance abuse	2012	10.46	**2012**	2016	
community sample	2014	9.85	**2014**	2018	
psychiatric disorders	2014	7.78	**2015**	2018	
drug use	2016	7.52	**2016**	2017	
posttraumatic stress	2017	9.24	**2017**	2019	
students	2017	8.21	**2017**	2020	
corporal punishment	2019	8.63	**2019**	2020	
intergenerational transmission	2019	7.83	**2019**	2022	
childhood	2003	8.3	**2020**	2022	
german version	2020	7.93	**2020**	2022	
ptsd	2014	7.73	**2020**	2022	

Fig. 11. Top 25 keywords with the strongest citation bursts of psychological violence research in the last 20 years in WOS.
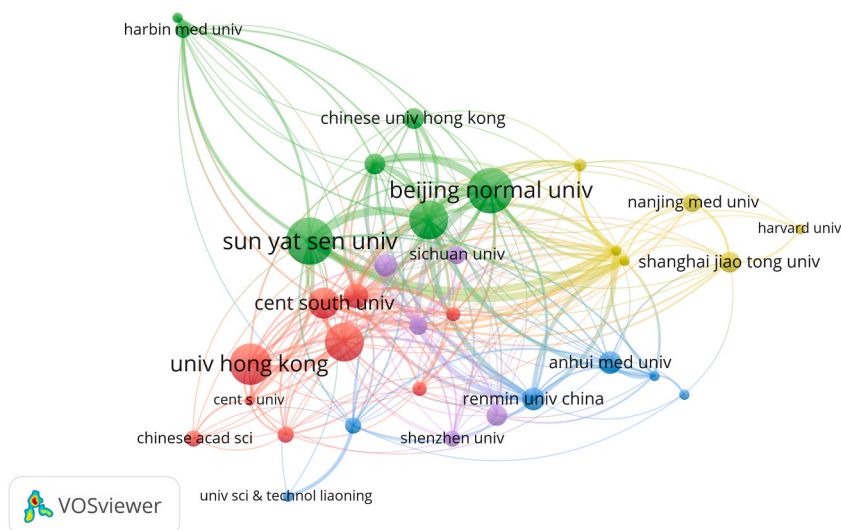
4. Discussion

4.1. Research status of psychological violence

In recent years, there has been increasing attention given to the psychological issues caused by non-physical attacks, such as verbal aggression, leading to the emergence of psychological violence as a significant research domain. Over the past two decades, there has been a rising trend in the overall publication output related to research on psychological violence, indicating a growing emphasis on this field by scholars worldwide. This can be attributed to the combined effects of increased societal attention, social transformation and cultural shocks, and the emphasis on policies and regulations. As society's focus on mental health issues intensifies, the problem of psychological violence has also garnered greater attention. Media coverage, social activities, and public education have propelled the issue of psychological violence into the public eye. Social changes, cultural impacts, and the proliferation of emerging technologies have significantly influenced traditional interpersonal relationships and social interaction patterns, giving rise to psychological health issues such as psychological violence. Additionally, the establishment of relevant policies and regulations by various countries and regions may have encouraged more researchers to focus on this field [11].

In terms of publication output, the United States ranks first globally with 1860 publications, accounting for 42.40 % of the total international publications. England ranks second for publication output but first for average citations per article. China also demonstrates simultaneous attention to the field of psychological violence, ranking fourth globally in terms of publication output. However, the average citation count for Chinese publications in this field is relatively low, indicating insufficient influence and credibility. China currently has weaker core influence in this field compared to the United States and the United Kingdom, suggesting the need to explore more high-value and innovative contributions in future research endeavors. An analysis of the publication output from China during the specified time period reveals that Chinese scholars have contributed relatively fewer articles in SCI and SSCI, with lower citation counts. Only 311 papers related to psychological violence were included in the WOS database. Among these, Professor Ciyong Lu and Professor Lan Guo from Sun Yat-sen University have made significant contributions to this field. Currently, Chinese scholars' research efforts primarily focus on topics such as Post-Traumatic Stress Disorder (PTSD), intimate partner violence, and suicidal behavior. However, there is limited research conducted by Chinese scholars in important and trending areas of international research, such as childhood abuse, student populations, and sexual violence. These considerations provide valuable insights for our subsequent research endeavors [12]: What are the interactive effects and underlying mechanisms between childhood maltreatment and psychological violence? What factors serve as protective or risk elements in their interrelationship? Some scholars have posited that psychological and sexual violence may coexist within the same relationship; thus, what forms of psychological violence might occur within contexts of sexual violence, and how do these manifestations impact the process of sexual violence? Additionally, what types of psychological violence might students encounter in their growth environments? How do students' personality traits, psychological characteristics, and environmental attributes influence the issue of psychological violence? The exploration of these questions can enhance our understanding of the antecedents and consequences of psychological violence and provide empirical evidence for the prevention and intervention of such issues.

From the perspective of publishing entities, the top ten institutions in terms of publication output are all based in Europe and North America. Prominent among these are research institutions centered around the University of Toronto, Columbia University, and King's

Fig. 12. Map of cooperation network of core organizations in China. Each circle represents an organization, with the size of the circle indicating the number of publications. Larger circles correspond to higher publication quantities from the respective organization. The lines between circles signify connections between organizations, with the thickness of the lines representing the intensity of collaboration. Thicker lines denote stronger collaborative relationships. Additionally, networks of different colors in the connections represent distinct collaborative clusters.

College London, which have achieved the highest publication outputs. These institutions also demonstrate robust collaborative networks and a high degree of cooperation, indicative of a multi-core and multi-clustered structure. Several factors may account for this: Firstly, these schools and research institutions are endowed with ample research resources and financial support, coupled with superior experimental equipment and research facilities, which attract distinguished researchers. They boast a strong academic environment and well-established research networks, bringing together influential researchers with rich and diverse professional backgrounds who collaborate and disseminate their research findings through academic conferences, specialized journals, and collaborative projects, thereby expanding the reach and citation count of their work. Secondly, these schools and institutions enjoy a high reputation in fields such as psychology and social sciences, often engaging in cutting-edge research directions, which draws the attention and collaboration of researchers worldwide. Furthermore, the socio-cultural diversity in European and North American countries, along with more advanced developments in mental health education and research, results in a more active engagement in the study of psychological violence. These institutions are located in regions with abundant mental health surveys and research projects, providing researchers with a wealth of data and sample resources.

In China, Sun Yat-sen University leads in publication output, followed by Beijing Normal University. Compared to other universities in China, Sun Yat-sen University and Beijing Normal University have established broader cooperation networks, collaborating with various domestic and international research institutions, resulting in higher research outcomes (Fig. 12). Research conducted by Chinese research institutions in this field is mostly in the developmental stage. In the future, they can actively develop domestic and international cooperative relationships in research areas such as post-traumatic stress disorder, intimate partner violence, and suicidal behavior. Additionally, Chinese educational institutions must enhance collaboration in current international research hotspots, such as child abuse, student populations, and sexual violence, to capture relevant trends and innovative insights.

There are many international academics among the core group of authors. The collaboration group led by Professor Rodriguez-carballeira A, Professor Afifi TO, and Professor Strathearn L has a significant publication output. Professor Rodriguez-carballeira A previously focused on research related to workers, workplace, and social aspects, but in recent years, the focus has gradually shifted towards mental disorders and intimate violence. Professor Afifi TO has been focusing on areas such as parenting, childhood abuse, and PTSD, with an emphasis on the occurrence and development of mental disorders in education and adulthood. This field has emerged as a recent research trend and has important implications for the study of psychological violence, providing valuable references and guidance.

In terms of disciplinary fields, psychological violence involves a wide range of disciplinary categories, with a predominance of multidisciplinary cross-studies. In terms of disciplinary categories, for example, those in the top 10 include humanities and social sciences-related applied psychology, social psychology, family studies, social work, etc., clinical medicine-related psychiatry, clinical psychology, clinical neurology, etc., criminology and criminal law in the field of jurisprudence, as well as preventive medicine and occupational health in the direction of public health. Psychological violence is a complex issue that necessitates a multidisciplinary perspective and integrated research to provide novel insights into the mechanisms and strategic exploration of this phenomenon. The results indicate a close association between psychological violence and disciplines such as psychiatry and clinical psychology, with an increasing trend in publication volume in mental health journals. This reflects the widespread concern among researchers and clinical practitioners regarding the impact of psychological violence on individual psychological well-being. The reasons for this heightened attention include: firstly, the growing societal awareness and understanding of psychological violence; secondly, the demand for identification, assessment, and intervention of psychological violence by clinical psychologists and psychiatrists in practice, which has spurred relevant research; and thirdly, the development of theoretical frameworks and therapeutic models for psychological violence has propelled scholars to delve deeper into its study. Additionally, family studies and social work being among the top five disciplinary themes highlight the significance of family environments and social work. In future research, focusing on how family factors (e.g., domestic violence, dysfunctional family systems) influence psychological violence and examining interventions and the construction of social support systems within the field of social work will be beneficial for the prevention and intervention of psychological violence.

4.2. Research hot topic of psychological violence

Keyword clustering and temporal mapping have illuminated that research in the field of psychological violence over the past two decades has concentrated on the influencing factors, manifestations, harms, affected populations, measurement techniques, and mitigation strategies of this phenomenon. The findings affirm that psychological violence can inflict both psychological and physical harm on individuals. The etiology and repercussions of psychological violence imply that exposure to violence and experiences of abuse or isolation during childhood and adolescence can precipitate the development of psychological violence in adulthood, leading to the development of autism [13], depression [14], personality disorders [15], suicidal tendencies [16], and bipolar disorder [17]. Clustering analysis also reveals that psychiatric violence is intricately linked to public safety and health behaviors, including smoking, alcoholism, drug use, self-mutilation, self-harm, and risky sexual behaviors. Temporal mapping of keywords indicates that psychological violence has become an increasingly pervasive issue across all demographic groups, including students [9], employees [18], couples [19]; children [20], adults [21], the elderly [22,23], with various contexts and forms of occurrence, such as in educational settings [24], family [25], and workplace [26]. With the widespread use of the Internet, cyber psychiatric violence has also emerged as a significant concern [27]. Cluster I primarily investigates the interplay between sexual violence, abuse, and trauma, suggesting that the concomitant effects of sexual violence, sexual abuse, and psychological violence may inflict on the psychological health and trauma of the populations, with overlapping clinical characteristicsFor instance, individuals subjected to psychological and sexual abuse are at a significantly higher risk of developing psychiatric disorders such as depression and anxiety disorders in adulthood [28–30]. This cluster also examines the differential impacts and harms; Cluster II focuses on the nexus between women, intimate relationship

violence, relationship violence, and gender, indicating two aspects. Firstly, based on research on the prevalence and characteristics of women's exposure to intimate partner violence and relationship violence, relevant professionals should pay increased attention and focus on these issues within female populations [31–33]; Secondly, psychological violence can be explored through the lens of gender roles, with different genders potentially employing distinct strategies in intimate partner violence or relationship violence. Females may more frequently resort to psychological manipulation and verbal violence, while males might opt for a combination of coercive control and physical abuse [34]; Cluster III delves into the level of family education, suggesting that abusive and verbally abusive parental behaviors towards children may elevate the likelihood of psychologically violent behaviors. In populations subjected to childhood psychogenic violence, observable psychopathological behavior may arise from adverse impacts on personality, manifesting as immature defense organizations and impaired self-representation [7,35,36]; Cluster IV encompasses themes of neglect, risk factors, and illnesses, with a focus on the risk factors for psychological violence and the associated illnesses; Cluster V's mainly suggests the relationship between undesirable life behaviors such as drinking, smoking, drugs, and substance abuse and psychological violence [37–41]; Cluster VI is dedicated to the research direction of psychological violence assessment, an area where research articles are relatively scarce. Despite the limited number of studies on assessment tools for psychological violence, they are crucial for the accurate measurement, evaluation, and intervention of such behaviors. This underscores the potential for future endeavors to develop and validate assessment tools for psychological violence that are applicable across diverse cultural contexts and populations. Such tools would be instrumental in providing researchers and clinical practitioners with the necessary support for identification, diagnosis, and intervention efforts.

4.3. Current research limitations and prospects of psychological violence

4.3.1. Study breadth of the sample

Initially, it is important to recognize the limitations in the current scope of research on psychological violence. The predominant focus has been on specific groups such as students, couples, and traditionally recognized "vulnerable groups" like the elderly, homemakers, or children. This narrow focus has resulted in a relative neglect of "non-vulnerable groups," such as single young adults, who may also experience various forms of psychological violence, including workplace bullying (isolation by colleagues, humiliation and belittlement by superiors, and threats and hostility from competitors) [42], as well as emotional abuse encountered in offline dating or online interpersonal interactions [43]. Thus, broadening the breadth of research demographics is a practical necessity. Secondly, enhancing the diversity of the sample is crucial. The current research also lacks diversity in the sample, often overlooking the sociocultural, racial, and educational backgrounds that significantly influence experiences of psychological violence. This limitation hinders a comprehensive understanding of the issue and the development of inclusive strategies.

Future research should aim to expand the demographic scope by including a wider range of populations that may be affected by psychological violence. This includes considering the experiences of single young adults and other non-traditionally recognized groups. There is a clear need to enhance the diversity of the sample, ensuring that victims and perpetrators from various economic, social, and cultural contexts are represented. Such an approach will provide a more nuanced understanding of the prevalence and impact of psychological violence across different populations. Cross-group comparative studies should also be encouraged to identify differences in experiences and outcomes based on factors such as gender, age, occupation, and personality traits. This comparative analysis can uncover potential risk and protective factors, leading to a more robust knowledge base on psychological violence. Ultimately, this broader perspective will not only challenge and redefine traditional notions of who is affected by such violence but also contribute to the development of more inclusive prevention and intervention strategies that cater to the needs of all individuals, regardless of their perceived vulnerability. This reconceptualization is essential for raising awareness, reducing stigma, and ensuring equitable access to support services and resources for those at risk or affected by psychological violence.

4.3.2. Research depth of the formation mechanism

The etiology of psychological violence is highly complex, involving factors at the individual level (such as personal traits and mental health status), relationship level (such as family and social environments), and structural level (such as culture and social institutions) [44]. Current understanding of these mechanisms is not profound, necessitating a more in-depth investigation into how these factors interact with one another. For instance, there is a recognized cycle of victim-perpetrator interaction in psychological violence. While it is known that childhood abuse can lead to psychological trauma, eroding self-esteem and self-worth, and increasing sensitivity and vulnerability to behaviors such as humiliation, blame, and control, potentially rendering individuals victims of psychological violence, the precise mechanisms and conditions that facilitate this transition are not fully understood. Social learning theory posits that aggressive behaviors are learned through observation and imitation of violent cues in the environment; thus, individuals who have long suffered psychological violence are more likely to adopt violent behaviors, increasing their likelihood of becoming perpetrators [45]. Therefore, what is the interactive pattern between childhood abuse and psychological violence? What factors mediate or mitigate the relationship between the two? Under what conditions are individuals with a history of childhood abuse more likely to evolve into perpetrators or victims? These questions warrant in-depth investigation. The lack of understanding of the mediating and mitigating factors in this relationship, as well as the conditions that influence the evolution from victim to perpetrator, underscores the need for more detailed research. These gaps in understanding may hinder the development of effective intervention measures and preventive strategies.

Future research may explore the psychological, physiological, and social factors that may drive the transition between victim and perpetrator roles, as well as potential protective factors that could break this cycle, which is key to reducing the occurrence of such behaviors. This focus should be a central point of research in this field. Such an integrative approach could serve as a coordinating hub

in the field, facilitating a better understanding and management of the complexities surrounding psychological violence. Additionally, future researchers could employ a variety of methods in their research design, such as combining quantitative and qualitative approaches, to fully understand the role of individual and environmental factors in the genesis of psychological violence. By elucidating the mechanisms that perpetuate the cycle of violence, more effective prevention and intervention strategies can be formulated, which will not only strengthen our knowledge base but also contribute to better management of psychological violence, ultimately reducing its prevalence and impact on individuals and society.

4.3.3. Longitudinal research and intergenerational inheritance

Current research in the field of psychological violence predominantly consists of cross-sectional surveys and observational studies, with a notable scarcity of longitudinal studies such as case-control studies and follow-up investigations. This limitation hampers our in-depth understanding of the long-term effects and intergenerational transmission mechanisms of psychological violence. The lack of longitudinal studies restricts our ability to track the evolution of psychological health and behavioral patterns over time, which is essential for assessing the enduring impacts on mental health, interpersonal dynamics, and life outcomes for individuals subjected to psychological violence. Furthermore, the scarcity of longitudinal data presents a challenge in examining the complex interplay between suffering and perpetrating violence and its implications for individual development.

There is a clear need for future research to adopt more robust longitudinal designs to monitor changes in psychological health and behavior among individuals affected by psychological violence over extended periods. Additionally, burst keyword mapping has revealed intergenerational transmission as an emerging and impactful research hotspot in recent years. Although the volume of publications is small, the average impact factor and citation frequency are high, indicating its research value [46]. Future studies could focus on intergenerational transmission, examining the effects of psychological violence on subsequent generations and the role of family and societal mechanisms in this transmission process. Employing family study designs or exploring mediators and moderators of intergenerational transmission could be beneficial. Cross-cultural research could investigate how different social structures and cultural values shape patterns of violence across generations. Exploring effective intervention measures to disrupt the intergenerational cycle of violence is also a critical area for future inquiry. Therefore, researchers in the field of psychological violence may focus on such articles to learn from their research methodologies and innovative approaches. Exploring how family environments, sociocultural factors, and policy interventions influence the transmission of psychological violence behavior could be a promising direction for research. Scholars in this area need to address the challenge of accurately measuring and tracking intergenerational psychological violence behavior and determining how to conduct comparative studies across different cultural and social contexts.

4.3.4. Development of the evaluation tools

Existing assessment tools for psychological violence exhibit several limitations. Firstly, there is a lack of standardization; to date, no universally accepted and widely utilized standardized psychological violence assessment tool exists. Secondly, there is a degree of subjectivity involved in the assessment process. Psychological violence assessments involve observing and interpreting an individual's behaviors and speech, and current tools largely rely on self-report questionnaires, which are susceptible to the assessor's subjective biases and the Hawthorne effect. The subjectivity of assessments and the respondents' tendencies to conceal can lead to inconsistent results and diagnoses, reducing the accuracy and reliability of the evaluations. Thirdly, current tools do not comprehensively cover all aspects of psychological violence, which includes verbal insults, threats, humiliation, and controlling behaviors. The existing assessments fail to capture the full spectrum of behaviors and dimensions to provide an accurate evaluation and diagnosis.

Future research should consider the following: On one hand, establishing widely accepted standardized assessment tools is essential to ensure consistency and comparability in evaluations. Combining quantitative and qualitative methods to construct a comprehensive assessment tool could enhance the accuracy and credibility of evaluations. Additionally, given that the expression and perception of psychological violence are influenced by cultural factors, future assessment tools should consider cross-cultural applicability, taking into account behaviors and concepts within different cultural contexts. On the other hand, leveraging technology and artificial intelligence can lead to the development of innovative assessment tools. The Experience Sampling Method (ESM), proposed in recent years, is a data collection approach designed to capture real-time behaviors, feelings, and thoughts in everyday life or work settings [47]. This method provides immediate data on individuals' actions and thoughts during various experiences at different times and places, ensuring the timeliness of the data [48]. Applying this method to the field of psychological violence can assist researchers in better identifying and assessing such behaviors [49]. With the advent of the big data era, advancements in data acquisition, transmission, and analysis technologies may facilitate the use of this approach for evaluating psychological violence. The role of technology in the assessment and management of psychological violence is also emerging as a novel trend. Studies have shown that using AI to detect cyberbullying through pattern recognition in social media posts is a burgeoning field [50,51]. Moreover, digital platforms and mobile applications offer innovative avenues for real-time monitoring, intervention, and support for psychological violence. The potential of wearable technology and biometrics in collecting data on stress responses and other physiological reactions to violence can also be explored in future research.

4.3.5. Research on prevention and intervention strategies

In addition to highlighting the assessment of psychological violence as an emerging research trend, we have observed that an increasing number of scholars in the field are seeking mitigation strategies. It is essential to investigate the efficacy of various intervention measures, such as cognitive-behavioral therapy, mindfulness-based approaches, and sleep hygiene education, with a particular focus on developing psychological interventions aimed at emotional regulation and stress management skills to alleviate the adverse effects of psychological violence. Researchers exploring the effectiveness of intervention measures should employ rigorous

research methodologies for evaluation, including randomized controlled trials (RCTs), longitudinal studies, and extensive meta-analyses. These methods will enable researchers to identify which interventions are most effective in fostering resilience and recovery among victims of psychological violence.

Therefore, in future research, investigators should delve into risk factors associated with psychological violence to devise targeted prevention and intervention strategies. Emphasis should be placed on early intervention, through widespread education, support, and training in schools, families, and communities, to help individuals recognize, understand, and guard against psychological violence, thereby preventing its occurrence and escalation. Furthermore, research should investigate interventions at the societal and institutional levels, such as the establishment and enforcement of laws and regulations, educational policy reforms, and workplace safety measures. By punishing perpetrators, enhancing public awareness campaigns, and creating secure environments, these measures aim to prevent and reduce the incidence of psychological violence.

Some scholars have also begun to conduct exploratory research on psychological violence from the genetic level, such as plasma glutamate, r-aminobutyric acid, cortisol and COMT genes. Compared with previous bibliometric studies, this study analyzes and presents the results of international research in the field of psychological violence from more perspectives. However, there are some limitations. First, we only selected literature related to psychological violence in the past 20 years for bibliometric statistics and visual analysis. Second, the data taken for analysis were only selected based on the three core data of SCI-Expanded, SSCI, and CPCI-S in the WOS database, and only the English literature was analyzed, which may have some omissions of other databases or literature in other languages.

5. Conclusion

In conclusion, this study provides a comprehensive bibliometric analysis of the psychological violence literature, examining the characteristics of published articles, research content, hotspots, and trends in visual mapping and tabular presentation. The rising publication trend reflects a burgeoning global interest in psychological violence. Despite this, there is a pressing need for enhanced collaboration among researchers, institutions, and across nations to advance scientific understanding in this field. Future investigations should employ a multidisciplinary and multimodal approach, targeting various forms of psychological violence across diverse populations. The development of refined measurement tools, exploration of underlying mechanisms, and the fortification of effective intervention strategies are imperative. This paper serves as a reference for future scholars, guiding direction selection and team formation in the pursuit of research within this domain.

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Not applicable.

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Data availability statement

The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding authors.

CRediT authorship contribution statement

Duoqin Huang: Writing – original draft, Software, Investigation, Data curation, Conceptualization. **Dixiu Liu:** Visualization, Funding acquisition, Data curation. **Xin Wan:** Writing – original draft, Visualization. **Kang Zou:** Software, Data curation. **Xi Gong:** Writing – review & editing, Visualization, Validation, Funding acquisition, Conceptualization.

Declaration of competing interest

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