

The Evolution of Knowledge: A Bibliometric Exploration of Research Trend in Polyvictimization and Adolescent Mental Health

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ABSTRACT

The bibliometric study analyzes the progression of global research on polyvictimization from 2005 to 2023, focusing on its impact on adolescent mental health. Polyvictimization, a term introduced by Finkelhor in 2005, encompasses multiple victimization from such as sexual abuse, bullying, and witnessing violence, which cumulatively impact on individual's well-being. This study employs a bibliometric approach to dissect the research landscape, identifying pivotal authors, institutions, and countries that have significantly contributed to the discourse. We mapped publication trends, citation metrics, and co-authorship networks to reveal a growing academic interest and an interconnected global research community with the United States as a central hub. The results indicate an increased recognition of polyvictimization's mental health implications, particularly during critical developmental periods in youth. This comprehensive review serves as a vital resource for researchers, policymakers, and practitioners, offering insights into past developments and guiding future research trajectories in understanding and mitigating the effects of polyvictimization.

Keywords: Polyvictimization, Victimization, Trauma, Bibliometric, Mental Health, Adolescent

INTRODUCTION

Victimization has a deep-seated presence across the globe, rooted in the interaction between offenders and the victims in the causation of various crimes. In general, a victim can be an individual, an organization, the ethical order, or even the legal system, when they are scarce, misused, or adversely affected by a particular unlawful or illegal act (Schneider, 1982). It encompassed the experiences of being harmed, either directly or indirectly, or being in need of protection that harm through the actions of others (Oxfordbibliography, 2017). Beyond the immediate consequences, such as physical harm or material losses, personal experiences of victimization can lead to negative emotions, including anger, depressive symptoms, anxiety, concerns about affecting social cognition, and potential future risks (Morlat et al., 2022; Wojciechowski, 2020; Ruhs et al., 2017).

Various types of victimization have been categorized in psychological and criminological studies. These include physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, physical assault, sexual assault, domestic or intimate partner violence, stalking, community violence, bullying, kidnapping, human trafficking, torture, war violence, genocide or ethical cleansing, hate crimes or identity-based violence, property crimes and robbery, among others (Oxfordbibliography, 2017). Researchers have introduced the term

'Polyvictimization' to encompass all these discrete types within a specific category. The term polyvictimization was first coined by David Finkelhor (2005), which refers to the experience of multiple forms or different kinds of victimization, such as sexual harassment, emotional abuse, bullying, witnessing family violence, and exposure to community violence. It goes beyond multiple episodes of the same types of victimization (Turner et al., 2017; Ali et al., 2024).

Based on recent evidences, it has been observed that multiple forms of victimization can have a significant impact on mental health. Victimization is recognized as a major stressor and a significant etiological factor in various psychiatric disorders (Soler et al., 2013). A subgroup of polyvictims has consistently emerged in research conducted with children and adolescent in various global settings, including community, school, psychiatry, child welfare, and juvenile justice sample (Oxfordbibliography, 2017). However, it is important to note that polyvictimization can have a profound and unfortunately lifelong biopsychosocial impact during critical developmental periods (Charak et al., 2016). In case of youth, it has been extensively examined that those children and adolescent are often the victims of crime, violence, and various forms of abuse. These victimizations can take the form of physical assault, child maltreatment, sexual abuse, bullying, and more (Finkelhor et al., 2011). However, it has been observed that polyvictimization is associated with increased risk factors, engagement in health risk-behaviors, suicidal actions and mental health problems such as, depression, anxiety, stress, social dysfunction, etc. among children and adolescents (Minh et al., 2016; Ali et al., 2023). For example, Interpersonal violence, a major type of victimization ranks among the top five leading causes of injuries and, at times, even fatalities among children and adolescents (United Nations Children's Fund, 2014).

Polyvictimization is currently recognized as one of the primary contributors to elevated rates of mental health problems, often associated with frequent early exposure and a heightened presence of negative symptoms across multiple domains (Andrew et al., 2015; Kallstrom et al., 2020). It encompasses a diverse range of traumatic experiences rather than being a one-dimensional occurrence, particularly among youth (Adams et al., 2017). For instance, reports of polyvictimization commonly includes instances of emotional abuse, early childhood trauma, verbal abuse, and enduring internal distress, all of which can significantly predict emotional distress, and also leads to the bad relation with parents and peers in households (Yakub et al., 2024, Spinazzola et al., 2014; Kaplow & Widom, 2007).

Recent researches in the field of polyvictimization has started to explore various of victimization that occur in conjunction. For example, in nationally representative U.S. study, Turner et al., (2009) found that lifetime experiences of victimization are typically associated with two of three other victimizations, significantly increasing the risk of exposure to further victimizations. It appears that distress, such as victimization, is not randomly distributed but tends to cluster and vary based on specific individual and contextual factors (Hamby & Grych, 2013). This highlights the importance of considering the interplay of different victimization. Furthermore, the field of polyvictimization has significant implications for the prevention of childhood victimization, as it can guide the development of more comprehensive and integrated program approaches (Hamby & Grych, 2013). Pedersen et al., (2020) also emphasized that polyvictimization unquestionably represents a substantial risk factor for mental health problems, warranting the attention of mental health policymakers (Ali et al., 2022). Undoubtedly, the issue of polyvictimization is a significant public health concerns, associated with a wider range of problems both in short-term and long-term. Numerous researches have investigated its impact on mental health issues, such as depression, anxiety disorder, and aggressive behaviors (Mangold & King, 2021; Ford et al., 2010; Caspi et al., 2002; Cohen et al., 2001). Additionally, various other forms of victimization and traumatic experiences during adolescence have been linked to adjustment difficulties in children (Cyr et al., 2013).

This study aims to provide a thorough bibliometric analysis of the impact of polyvictimization on mental health among adolescents. By using bibliometric analysis, the current study identifies the most significant literatures, determine the contemporary discipline areas, and provides insight for current research trends and directions for the future on the research based on multiple forms of victimization. In order to achieve the aim, the methodology involves the evaluation of polyvictimization related literatures, topics, publication patterns, and utilization. The performed analyses followed through different perspectives, such as; summary information, authors, countries, and networks, and further includes the different variables, such as; authors,

sources, contents, citations, and origins. The data was extracted from Scopus with the help of publish or perish, and analyses was done using the VOSviewer in order to explore the researches carried out on polyvictimization. However, the study is limited to article, book chapters, and conference papers from 2005 to 2023. Thus finally, the papers shed the light on the effect of polyvictimization on mental health among adolescents.

METHODOLOGY

Protocol

For the current study, the review is aligned with PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis Protocol) framework 2015 checklist (Moher et al., 2015). The methodology adopted for this study is based on two major steps: (a) data collection, which includes the selection of topic, formulation of search strategy, screening of data and data extraction, and (b) analysis of data by using various relevant tools. The steps associated for these two major steps are shown below in figure 1.

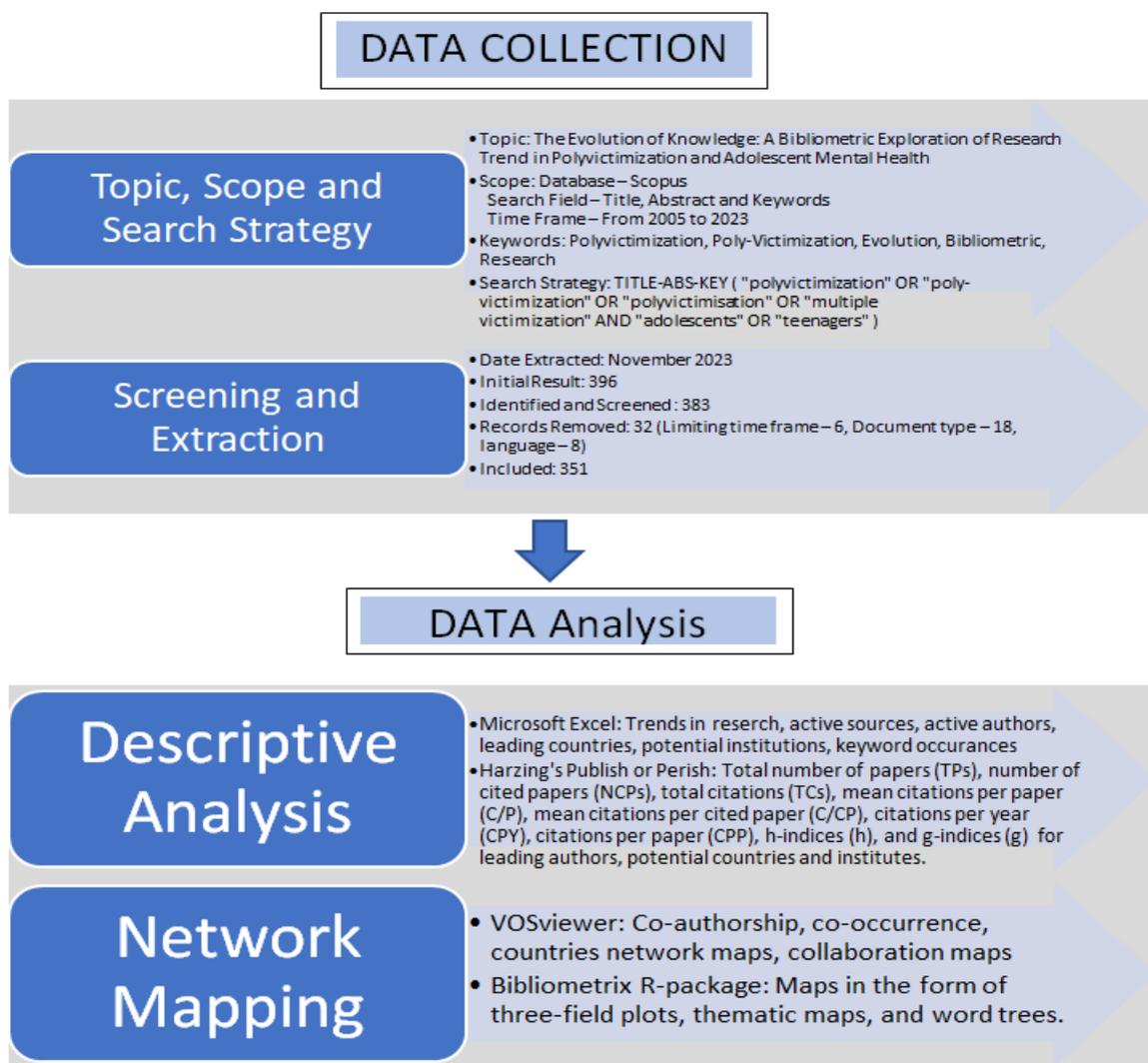


Figure 1. Proposed framework for the current study

Eligibility Criteria

The current review study focused on the issues of polyvictimization among adolescents and its impact on mental health among adolescents. Conclusive studies were selected and extracted from database Scopus. The review includes studies from 2005, the year when the concept of polyvictimization was first introduced by David Finkelhor, till August 2023. A far as the eligibility is concerned, all types of literature (either,

cumulative, empirical, etc) are included, although there is no specific threshold is set to define polyvictimization, neither any specific timeframe for measurement (example, past year or lifetime). The review only focuses on multiple forms of victimization or polyvictimization, not on single individual victimization in a study.

Inclusive Criteria

The studies included for this review certainly have some inclusive criteria, and is based on the demand of study. (a) The targeted population of this study is only focused on adolescents (b) Only quantitative studies were focused, includes all the research settings and sample types (c) Only those studies were included which focuses on multiple types of victimization or polyvictimization (d) Studies focusing on polyvictimization as a predictor (independent variable) were to be included (e) Only those studies which were available in English language.

Search Strategy

The literature searched was conducted and extracted from the platforms of Scopus and WOS (web of science), however, no additional platforms were used and studies were identified and extracted separately apart from these platforms in this step. The search strategy was specifically used in order to examine the trend in the issue of polyvictimization and its impact on mental health among adolescents. Moreover, the database searches were limited to the title, abstract and keywords. The key steps and sub-steps associated with search strategy for this study are given below:

Table 1. Search string for the extraction of the relevant documents

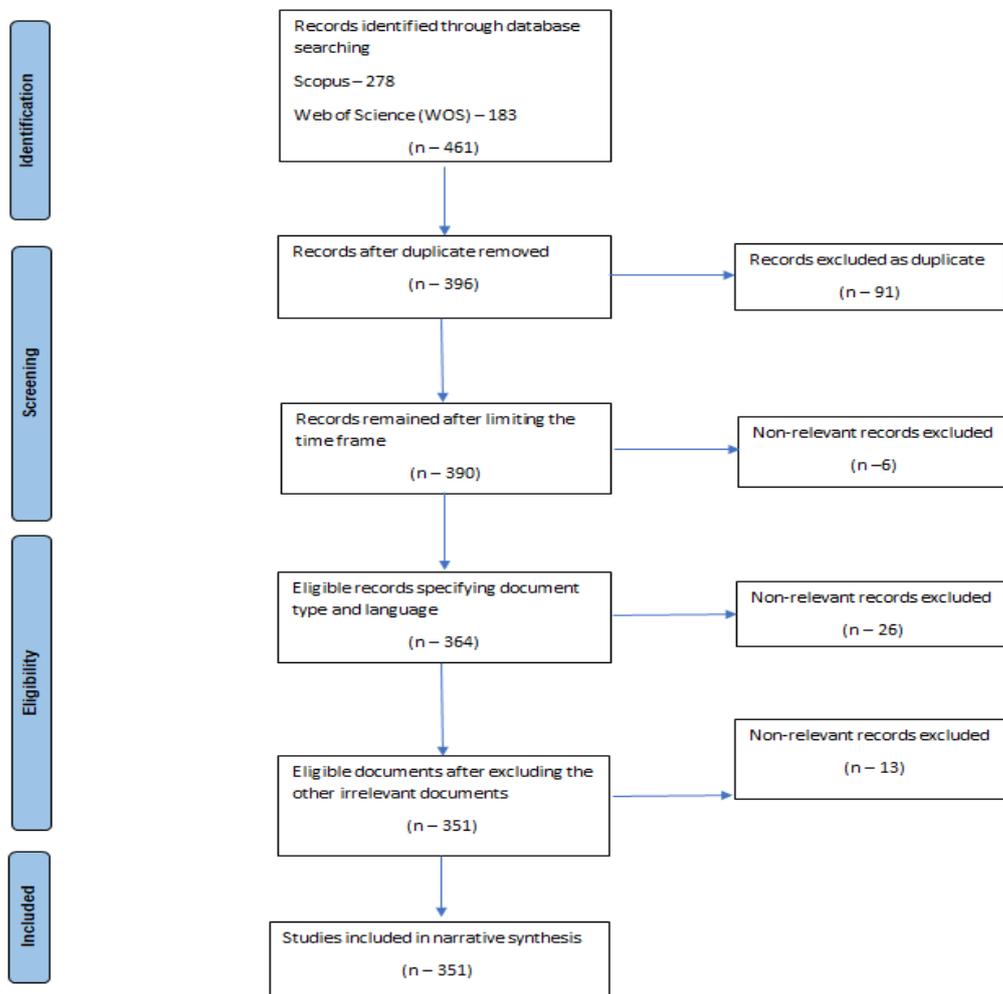
No	Stage	Search string	Document Result
1	Initial search string	TITLE-ABS-KEY ("polyvictimization" OR "polyvictimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers")	461
2	Removing Duplicates	TITLE-ABS-KEY ("polyvictimization" OR "polyvictimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers")	396
2	Limiting the time frame	TITLE-ABS-KEY ("polyvictimization" OR "polyvictimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers") AND PUBYEAR > 2004 AND PUBYEAR < 2024	390
3	Specifying the document type	TITLE-ABS-KEY ("polyvictimization" OR "polyvictimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers") AND PUBYEAR > 2004 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "cp"))	372
4	Specifying the language	TITLE-ABS-KEY ("polyvictimization" OR "polyvictimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers") AND PUBYEAR > 2004 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English"))	364

5	Screening and excluding the irrelevant documents	TITLE-ABS-KEY ("polyvictimization" OR "poly-victimization" OR "polyvictimisation" OR "multiple victimization" AND "adolescents" OR "teenagers") AND PUBYEAR > 2004 AND PUBYEAR < 2024 AND NOT EID (2-s2.0-85151563615 OR 2-s2.0-85096370329 OR 2-s2.0-85087639965 OR 2-s2.0-85115155919 OR 2-s2.0-85147679333 OR 2-s2.0-84982298796 OR 2-s2.0-85145614298 OR 2-s2.0-85106366467 OR 2-s2.0-85088838017 OR 2-s2.0-85089480564 OR 2-s2.0-85074976814 OR 2-s2.0-85065770603 OR 2-s2.0-85145329833) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English"))	351
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Data Management and Selection

The initial search string produced 461 records of literatures, which were then extracted from the Scopus and WOS platform. After removing the duplicates and further limiting the time frame from 2005 to 2023, the total number of papers were then first dropped down to 396, and then down to 390 papers. Furthermore, after specifying the document type and limit-it to article, book chapters, and conference papers, the studies were then restricted to 372. Moreover, after specifying the language and limit-it to English only, the number of results were then declined markedly to 364. Additionally, after screening further papers through title and abstract, and excluding the irrelevant documents, the final number of papers included for this study were 351. Figure 2 shows the PRISMA structure for the record management and selection of the literatures.

Figure 2. Prisma Framework



RESULT

Current Publication Status in Polyvictimization and its Impact on Adolescent Mental Health

Annual Publication Trends

Evaluating publication patterns on a yearly basis is beneficial for researchers, as it aids in grasping the developmental trajectories of the discussed subjects (Zakaria et al., 2021; Khudzari et al., 2018). Figure 3 shows the evolution of publication trend in the field of polyvictimization and its impact on mental health among adolescents. The x-axis indicates the years, and the y-axis represents the number of publications. The graph illustrates a substantial and growing body of scholarly work on polyvictimization over an 18-year period, with the most significant increase in publication frequency occurring in the latter half of this period. The data captured in this graph would be vital for researchers, policymakers, and practitioners interested in the developments and expanding literatures on polyvictimization. From 2005 to around 2010, there is a modest yet steady increase in the number of publications, as indicated by the height of the bars. This period reflects the nascent stages of research focus on polyvictimization, where scholarly interest in beginning to take shape, albeit at a gradual pace.

Around 2011, there is noticeable uptick, in the volume of publications, which becomes even more pronounced after 2014. This surge suggests a growing recognition within the academic community of the importance of research in polyvictimization, potentially due to broader societal acknowledgement of its implications or advancements in related research methodologies. The trend accelerates sharply upwards from 2017 onwards, reflecting a significant boost in research output. This could be attributed to various factors, such as increased funding for research in this area, heightened awareness of the issue’s social and psychological impact, or a response to policy changes requiring more comprehensive studies on the subject.

Furthermore, the years 2020 to 2023 shows a particularly steep rise in the number of publications. This peak might correlate with global events or shifts in societal trends that bring the issue of publication into greater focus. For instance, the covid-19 pandemic and its subsequent impact on mental health and victimization could have spurred a wave of research attempting to understand and address these compounded challenges.

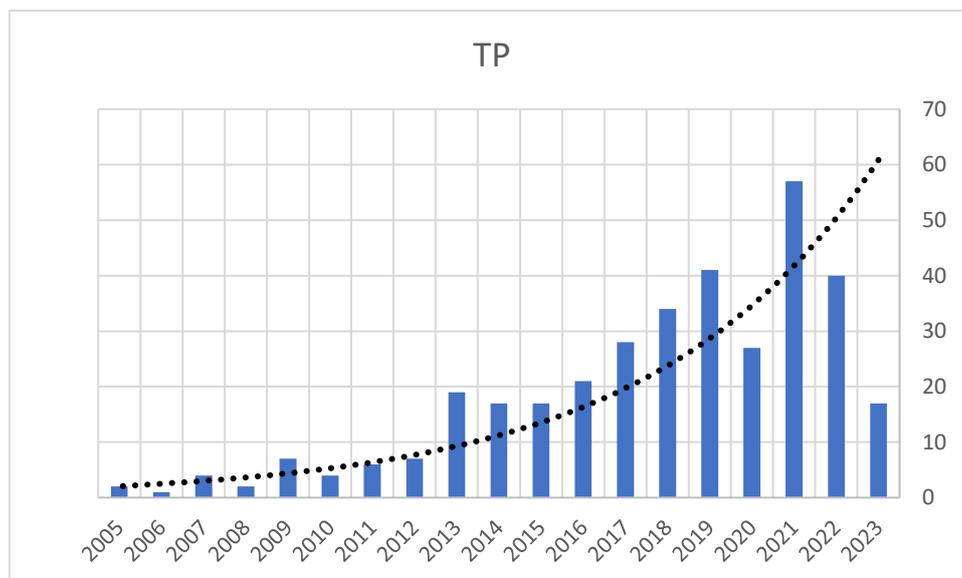


Figure 3. Evolution in the publication trend during 2005-2023

Moreover, figure 4 represents the annual publication documents and the total citations received against the annual publications. The tendency shown below is based on the 351 records extracted from the Scopus data base from 2005 to 2023 in the field of polyvictimization. The blue bar represents the annual number of publications, while the orange line and markers indicate the number of citations received per year. The graph

portrays a dynamic and maturing field of polyvictimization research. Initial steady growth in publications set the stage for periods of significant scholarly impact, as evidenced by later surges in citations.

From 2005 to approximately 2010, there is a slow but steady increase in the publications within the field, suggesting an initial growth in academic interest and research output. During this period, citations rise moderately in tandem with publications, which is typical in emerging research areas as foundational work begins to gain recognition.

Between 2011 and 2014, both publications and citations experience fluctuations. The number of publications sees a slight dip in 2011 and 2012 before ascending again in 2013 and 2014. Citations follows similar trend with some variation, peaking in 2014. These fluctuations could be attributed to the flow of research interest or the impact of key studies that either advanced the field significantly or, conversely led to re-evaluations of earlier research directions.

A noteworthy observation is the sharp increase in citations starting around 2015, which does not correspond with an equally significant rise in the number of publications. In 2018, there is a pronounced spike in citations that dwarfs all previous years, despite a decrease in publications from the prior year. This disparity indicates that research from this period may have been particularly influential, garnering attention and citations from within and possibly outside the field.

Following 2018, citation numbers decline but remain at a level that is elevated compared to the period before 2015. The number of publications continues to grow peaking in 2021. This peak in publications, paired with a high level of citations, points to a period of intense activity and considerable scholarly impact. By 2023, there is a noticeable drop in both publications and citations. This decline could reflect a variety, such as a temporary shift in research focus to other areas, a saturation of the topic, or perhaps a delay in the accumulation of citations for articles published in the last year, as there is often a lag between publications and citations.

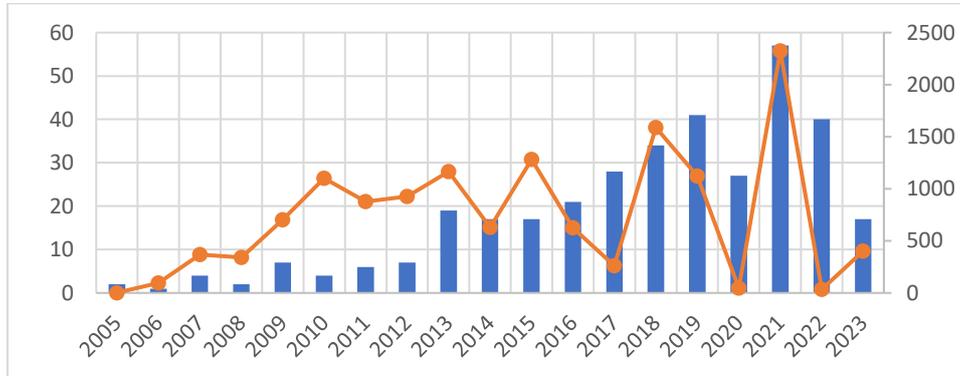


Figure 4. Annual publication and total citation per year during 2005-2023

Furthermore, table 2 enlists the citation matrix per year based on the retrieved documents. The highest citations to data were observed for the document published in 2007, with 2025 total citations. However, the total citations for recent years are expected to also increase in the coming years, since most of the documents citing them are not published yet.

Table 2. Yearly Publication and Citation Matrix for the selected documents during 2005-2023

Year	TP	%	NCP	TC	C/P	C/CP	h	g
2023	17	4.84%	2	2	0.12	1.00	1	1
2022	40	11.40%	30	95	2.38	3.17	5	7
2021	57	16.24%	53	369	6.47	6.96	10	13

2020	27	7.69%	24	341	12.63	14.21	12	17
2019	41	11.68%	41	703	17.15	17.15	15	25
2018	34	9.69%	34	1102	32.41	32.41	19	33
2017	28	7.98%	28	876	31.29	31.29	17	28
2016	21	5.98%	21	926	44.10	44.10	16	21
2015	17	4.84%	17	1164	68.47	68.47	14	17
2014	17	4.84%	16	628	36.94	39.25	12	17
2013	19	5.41%	19	1283	67.53	67.53	16	19
2012	7	1.99%	7	627	89.57	89.57	7	7
2011	6	1.71%	6	262	43.67	43.67	6	6
2010	4	1.14%	4	1589	397.25	397.25	4	4
2009	7	1.99%	7	1122	160.29	160.29	7	7
2008	2	0.57%	2	46	23.00	23.00	2	2
2007	4	1.14%	4	2325	581.25	581.25	4	4
2006	1	0.28%	1	34	34.00	34.00	1	1
2005	2	0.57%	2	403	201.50	201.50	2	2

Notes: total publication (TP); number of cited papers (NCP); total citations (TC); mean citation per paper (C/P) mean citations per cited paper (C/CP); h-indices (h); g-indices (g).

Citation Analysis of Most Prolific Authors

This section elaborates the list of most prolific authors in the field of polyvictimization research, detailing their publication output, citation matrix, and institutional affiliations from a bibliometric perspective. Out of 351 articles, the most prolific authors list is presented in the table who works in the field area. The table also reflects a strong academic output from a group of influential authors in the field of polyvictimization, with a range if institutions. The citation metrics, particularly h-index and g-index, reveal that these authors are not only prolific in terms of publication volume but also impactful, with their work receiving considerable attention and recognition within the scholarly community.

N.Pereda from Universitat de Barcelona, Spain, with a total of 23 publications, constituting 6.55% of the dataset. Pereda also boasts 22 cited papers, which underscores the impact of their work in the field. The author’s h-index is 12 and g-index is 22, indicating a significant influence and consistent scholarly contribution.

D. Finkelhor from the Family Research Laboratory in the United States has a comparable number of publications at 18, representing 5.13% of the dataset. Notably, Finkelhor’s work has garnered a remarkable 4968 citations, reflecting a profound impact on the field, with both the mean citations per paper and per cited paper at a staggering 276. This is mirrored in an impressive h-index of 15 and g-index of 18.

G. Guilera, also from the Universitat de Barcelona, matches Finkelhor’s publication count, with a total citation count of 424. Guilera’s average citation rates per paper and cited paper are 23.56, indicating high-quality contribution to the field, as evidenced by an h-index of 10 and a g-index of 18.

S. Hamby from the University of South in the United States and H.A. Turner from the Family Research Laboratory each have 16b publications. Hamby’s work has attracted 1151 citations, while Turner’s publications have been cited 4368 times, indicating their substantial contributions to the research community. Their h-indexes of 12 and 14, respectively, along with g-indices of 16 each, highlighting their research’s relevance and reach.

J.D. Ford from Uconn School of Medicine in the United States and A. Segura from Universitat de Vic – Universitat Central de Catalunya in Spain round out the list with 12 and 10 publications, respectively. Ford’s work has been cited 1265 times, and Segura’s has 187 citations, showing their active engagement with the research community albeit with a smaller volume of work.

Table 3. Most Prolific Authors in the field of Polyvictimization with minimum 10 publication.

Author Name	TP	%	Affiliation	Country	NCP	TC	C/P	C/CP	h	g
Pereda, N.	23	6.55%	Universitat de Barcelona	Spain	22	503	21.87	22.86	12	22
Finkelhor, D.	18	5.13%	Family Research Laboratory	United States	18	4968	276.00	276.00	15	18
Guilera, G.	18	5.13%	Universitat de Barcelona	Spain	18	424	23.56	23.56	10	18
Hamby, S.	16	4.56%	University of South	United States	15	1151	71.94	76.73	12	16
Turner, H.A.	16	4.56%	Family Research Laboratory	United States	16	4368	273.00	273.00	14	16
Ford, J.D.	12	3.42%	Uconn School of Medicine	United States	11	1265	105.42	115.00	9	12
Segura, A.	10	2.85%	Universitat de Vic - Universitat Central de Catalunya	Spain	10	187	18.70	18.70	8	10

Notes: total publication (TP); number of cited papers (NCP); total citations (TC); mean citation per paper (C/P) mean citations per cited paper (C/CP); h-indices (h); g-indices (g).

Text Analysis for Abstract and Title

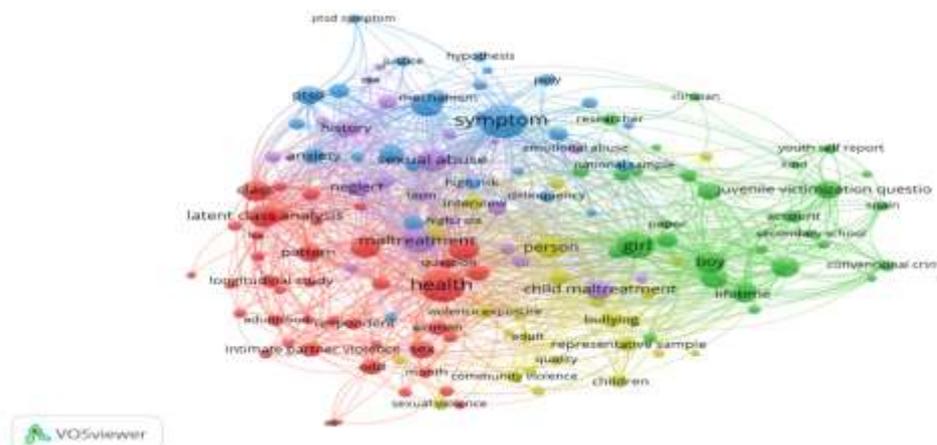


Figure 5. Network Visualization based on the text analysis for Abstract and Title

This section explains the most cited text analysis for abstract and title in the research area of polyvictimization. A total of 351 research papers were retrieved from the Scopus database having the journals articles (%), and conference papers (%). The network visualization map based on the text analysis for abstract and title illustrated in the figure 5. Below. The size of the node denoted the text phrases which are used to identify either the title or abstract. The co-occurrence between the phrases presented by the line between two nodes. The strength of co-occurrence between phrases is specified by the thickness of the lines.

Out of 351 research papers, the documents with most source titles, with a minimum 8 publications are enlisted in table 4. The data in table highlighted the key journals that are shaping the discourse and research in polyvictimization. “Child abuse and Neglect” emerges as a frontrunner in both publication output and citation impact, with “Journal of Interpersonal Violence” also playing a significant role. Each journal contributed uniquely to the field, with their citation metrics reflecting the depth and reach of their influence on polyvictimization research. The h-index and g-index provide additional insight into the enduring impact of the articles published in these sources.

Table 4. Most Active Source Title and Journals with minimum 8 publication.

Source Title	TP	%	Publisher	NCP	TC	C/P	C/CP	h	g
Child Abuse and Neglect	73	20.80%	Elsevier Ltd.	68	5342	73.18	78.56	31	75
Journal of Interpersonal Violence	45	12.82%	Sage Publication Inc.	44	1135	25.22	25.80	19	33
Psychology of Violence	12	3.42%	American Psychological Association Inc.	12	405	33.75	33.75	8	12
Child Maltreatment	10	2.85%	Sage Publication Inc.	10	609	60.90	60.90	8	10
International Journal of Environmental Research and Publication Health	10	2.85%	MDPI	10	245	24.50	24.50	6	10
Journal of Traumatic Stress	8	2.28%	Springer Publishing Company	7	105	13.13	15.00	5	8
Violence and Victims	8	2.28%	John Wiley and Sons Inc.	6	137	17.13	22.83	6	8

Notes: total publication (TP); number of cited papers (NCP); total citations (TC); mean citation per paper (C/P) mean citations per cited paper (C/CP); h-indices (h); g-indices (g).

Citation Analysis for the Leading Organization

Below table 5 shows the 10 most prominent organizations in the world, organized based on the total publication in the field of polyvictimization. This table presents a snapshot of the most influential institutions, with each organization contributing significantly to the field’s body of knowledge. The Universitat de Barcelona leads in publication volume, while the University of New Hampshire Durham stands out in terms of citation impact. These institutions, along with others listed, form the backbone of research in polyvictimization, driving forward the understanding of this critical area through high quality and highly cited scholarly work.

The Universiti de Barcelona in Spain stands out as the most prolific institutions in this field, with 33 total publications, which account for 9,40% of the dataset. This is a notable contribution, particularly given that 31 of these publications have been cited, leading to 695 total citations. The University of New Hampshire Durham in the United States follows with 22 total publications making up 6.27% of the dataset, and an impressive 4874

total citation, suggesting a very high level of influence. Moreover, Sewanee: The University of the South, also in the United States, has contributed 12 total publications and received 1054 total citations, showcasing the significance of its research contributions. Several other institutions, such as Northeastern University, the University of Southern California, and Universite Laval in Canada, each contribute total 10 publications to the field. Their citation metrics vary, with Northeastern University and Universite Laval showing higher citation averages per paper, indicating their prominent role in advancing polyvictimization research. Furthermore, the UConn School of Medicine, King’s College London, the University of Hong Kong, and Duke University, through contributing few total publications, displays considerable impact through their citation metrics.

Table 5. Top 10 productive organizations ranked based on total Publications

Institution	TP	%	Country	NCP	TC	C/P	C/CP	h	g
Universitat de Barcelona	33	9.40%	Spain	31	695	21.06	22.42	17	26
University of New Hampshire Durham	22	6.27%	United States	22	4874	221.55	221.55	19	22
Sewanee: The University of the South	12	3.42%	United States	12	1054	87.83	87.83	11	12
Northeastern University	10	2.85%	United States	10	231	23.10	23.10	7	10
University of Southern California	10	2.85%	United States	9	189	18.90	21.00	7	10
Université Laval	10	2.85%	Canada	9	267	26.70	29.67	8	10
UConn School of Medicine	9	2.56%	United States	8	968	107.56	121.00	6	9
King's College London	9	2.56%	United Kingdom	8	727	80.78	90.88	8	9
The University of Hong Kong	8	2.28%	Hong Kong	7	311	38.88	44.43	5	8
Duke University	8	2.28%	United States	8	500	62.50	62.50	7	8

Notes: total publication (TP); number of cited papers (NCP); total citations (TC); mean citation per paper (C/P) mean citations per cited paper (C/CP); h-indices (h); g-indices (g).

Citations Analysis of the Potential Countries

The provided map in figure 6 is a visual representation of the geographical distribution of publications in the field of polyvictimization, illustrating the total number of publications from different countries around the world. The map reflects the international nature of the polyvictimization research, with the United States leading by a significant margin in terms of publication volume at 178, which demonstrate its leading role in polyvictimization research on a global scale. The distribution of publications across the continents underscores the universal relevance of polyvictimization as a research field and highlighted the diverse contributions from different parts of the world, enriching the global knowledge base with a wide array of cultural and regional insights.

Spain, with 48 publications, is the second most productive country, showing a strong academic interest and contribution to the research of polyvictimization. It’s a key player in Europe and contributes significantly to

the global discourse in the field. Other countries displayed on the map, such as Canada (33 total publications), the United Kingdom (31 total publications), and Australia (9 total publications), exhibit a lighter shade, denoting a substantial but lower number of publications than the leading countries. Nevertheless, these figures indicate active and impact research communities in these regions, with a solid commitment to advancing the understanding of polyvictimization.

South Africa stands out as the leading country in this research field on the African continent with publications, highlighting its role in contributing to the field from a different regional perspective. Furthermore, the map also shows contributions from countries with emerging research outputs in polyvictimization, such as those in South America (Chile with total 13 publications), Asia (Hongkong with total 10 publications), and other parts of Europe (Sweden with total 12 publications), each participating in the global effort to address and understand the complexities of polyvictimization.

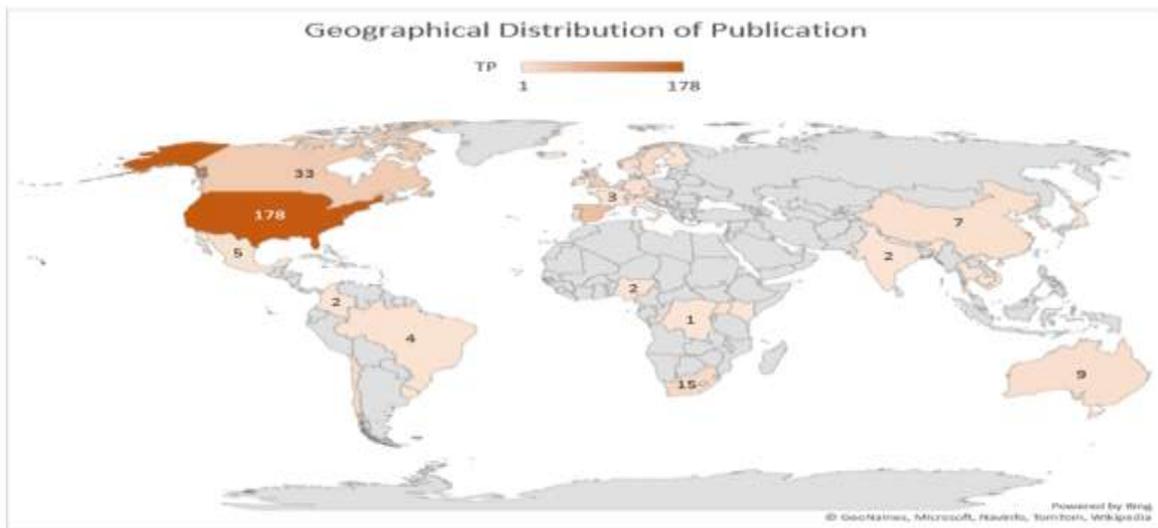


Figure 6. Geographical distribution of the publications.

The graph in figure 7 reflects a diverse international effort in polyvictimization research. The figure shows top 10 most productive countries in the research field. The United States is clearly the most prominent leader, with account for over a half of total publications of 178 (50.71% of the total). But there is an active and impactful participation from countries like Europe, Asia Africa, and Oceania. Each country’s contribution to the percentage of publications, along with their total citation counts, demonstrates the global nature of their field and varying degrees of influence and research activity across different regions.

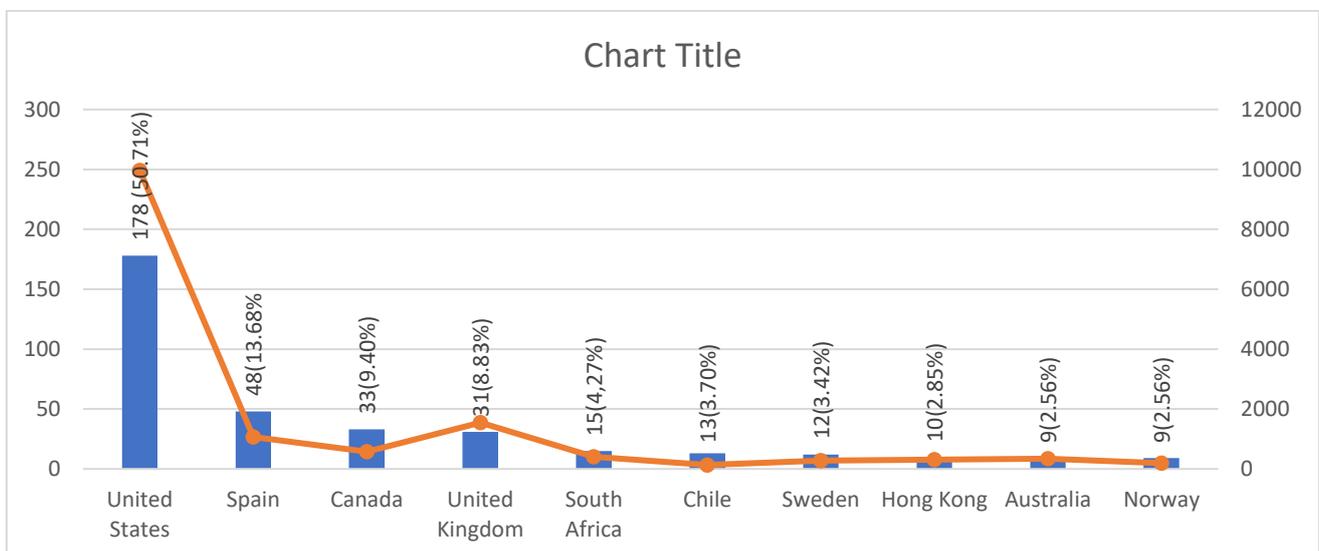


Figure 7. Top 10 countries in terms of publications

Below table 6 illustrates a diversified global effort in polyvictimization research, with the United States leading in volume and impact. The strong presence of European, African, and Asian regions reflects the international importance of polyvictimization research. Each country contributes to a global understanding of polyvictimization through a combination of prolific publication activity and influential scholarly work, as evidenced by their respective citation metrics and indices.

Table 6. Most leading countries with a total of 9 publications

Country	TP	%	NCP	TC	C/P	C/CP	h	g	Continent
United States	178	50.71%	165	9967	55.99	60.41	47	97	North America
Spain	48	13.68%	46	1063	22.15	23.11	20	31	Europe
Canada	33	9.40%	30	573	17.36	19.10	14	23	North America
United Kingdom	31	8.83%	25	1548	49.94	61.92	14	31	Europe
South Africa	15	4.27%	12	406	27.07	33.83	9	15	Africa
Chile	13	3.70%	11	134	10.31	12.18	7	11	South America
Sweden	12	3.42%	8	280	23.33	35.00	7	12	Europe
Hong Kong	10	2.85%	8	314	31.40	39.25	5	10	Asia
Australia	9	2.56%	9	337	37.44	37.44	9	9	Oceania
Norway	9	2.56%	9	189	21.00	21.00	7	9	Europe

Notes: total publication (TP); number of cited papers (NCP); total citations (TC); mean citation per paper (C/P) mean citations per cited paper (C/CP); h-indices (h); g-indices (g).

Below figure 8 shows the network graph generated through VOSviewer network graph illustrates the co-authorship relationship among countries in the field of polyvictimization. Each node on the graph represents a different country, and the size of the node typically corresponds to the number of publication or co-authorships that country has in the dataset. The lines between the nodes signify the co-authorship links, with the thickness of the lines indicating the strength or frequency of collaboration between countries.

The network graph depicts a vibrant and interconnected global community of researchers in the field of polyvictimization. The United States serves as a central hub of activity, with significant collaborative ties to other countries contributors across various continents. The dense cluster lines connecting the United States with other countries, particularly with Canada, the United Kingdom, and Spain, indicates strong international collaborations. The close proximity of these nodes to the United States further emphasizes the intensity of their research partnerships. Moreover, Spain also emerges as a significant node, with substantial links to France and other European countries, reflecting a strong European network of co-authorship in polyvictimization research. The graph includes other notable nodes such as the United Kingdom, Canada, and Sweden, each connected to multiple countries, suggesting their active participation in international co-authorship. Smaller nodes, such as those representing South Africa, Malaysia, Nigeria, and Italy, indicates these countries' emerging involvement in their field, with potential for growth in their international research networks.

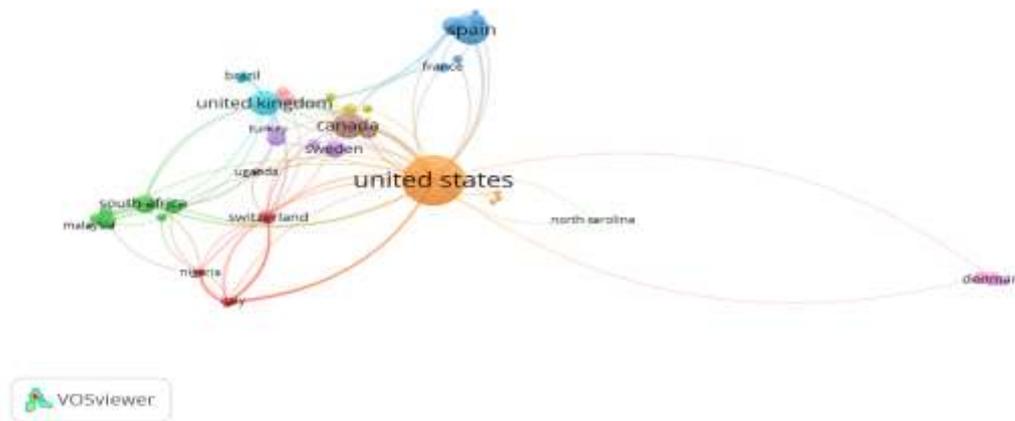


Figure 8. Co-authorship network visualization between Countries

Co-Occurrence Analysis of Authors Keywords

The co-occurrence of author keywords was determined by using the extracted Scopus data in VOSviewer. Initially, 1821 keywords appeared on the concerned topic when analyzing the Scopus file in VOSviewer. The keywords clusters were obtained on the basis of author keyword occurrences to obtain the most relevant information. A total of 296 items author keywords met the threshold. The potential 296 author keywords grouped into 6 clusters as shown in the figure 9.

- The cluster 1 is denoted by red color and contains 69 author keywords including, abuse, adolescence, adolescent behavior, age, age factors, antisocial personality disorder, article, bullying, caregiver, child, childhood adversity, chile, classification, clinical trial, cluster analysis, community sample, controlled study, crime, criminal behavior, cross-sectional studies, cyberbullying, data collection, dating violence, ethnic group, ethnology, externalizing, gender, girl, high school, hispanic americans, human experiment, human relation, human tissue, information processing, internet, interpersonal relations, juvenile, juvenile victimization questionnaire, lifespan, major clinical study, male, mental health service, mexico, multicenter study, odds ratio, peer group, peer victimization, poly-victimization, polyvictimization, prevalence, questionnaire, risk, risk assessment, school, school child, schools, scoring system, self report, sex difference, sex factor, sex factors, sexual harassment, sibling, social behavior, span, victim, victimization, and youth.
- The cluster 2 is denoted by green color and contains 68 author keywords including, adverse childhood experience, african american, alcohol consumption, alcoholism, anxiety, anxiety disorder, anxiety disorders, automutilation, cannabis use, child welfare, childhood trauma, clinical article, comorbidity, criminals, delinquency, depression, depressive disorders, disease association, disease severity, dissociation, drug dependence, drug use, dsm-iv, emotion, emotions, high risk behavior, high risk population, hispanic, justice, juvenile delinquency, juvenile justice, latent class analysis, loneliness, major depression, mental disease, mental disorders, mental health, Norway, offender, physical abuse, physiology, poly victimization, posttraumatic stress disorder, prediction, pregnancy, prisoner, problem behavior, psychology, ptsd, residential care, risk-taking, self-injurious behavior, sexual abuse, sexual assault, social justice, social problem, stress, stress disorder, substance abuse, substance use, substance-related disorder, suicidal ideation, suicide, suicide attempts, attempted, symptoms, trauma, violence.
- The cluster 3 is denoted by orange color and contains 44 author keywords including, addiction, adolescent health, aged, assault, caregivers, child abuse, child neglect, child parent relation, child victimization, child, preschool, childhood victimization, china, demography, domestic violence, family, family characteristics, family relations, family size, family violence, health, household, infant,

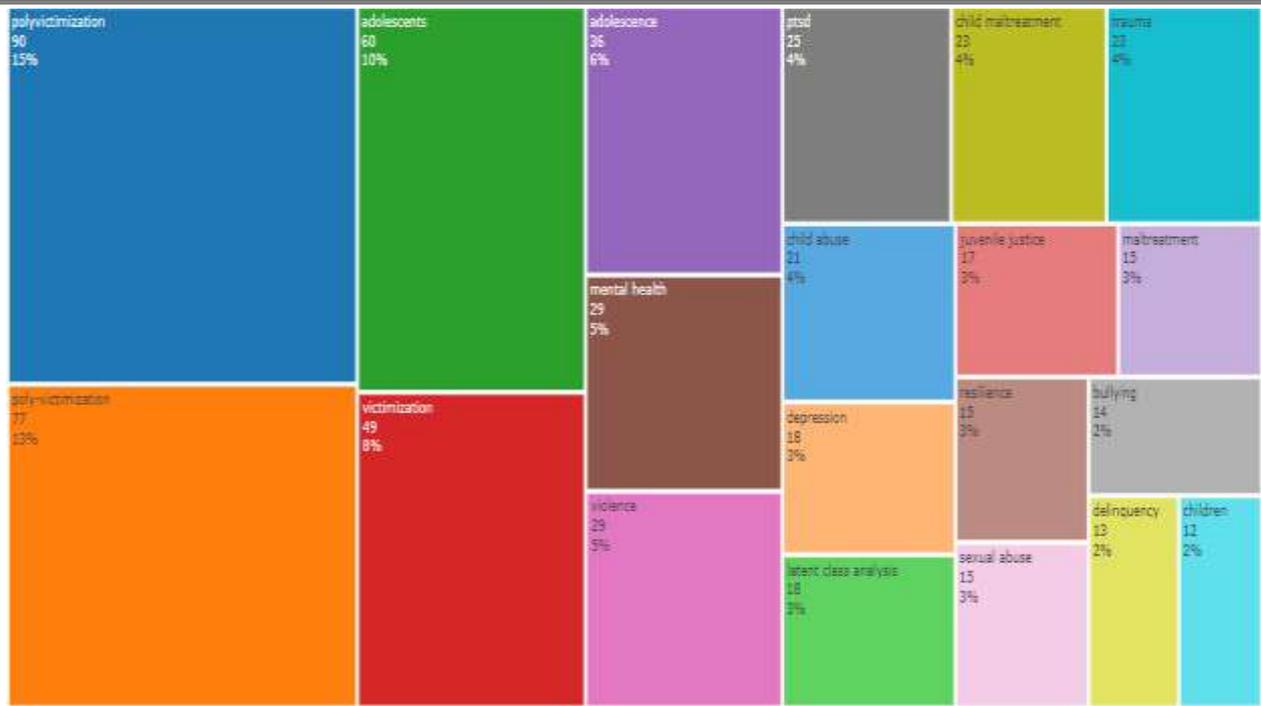


Figure 10. The tree-map of top 20 author keywords

Three Field Plots on trend of Polyvictimization

In this study, we utilized the Bibliometrix R-package to create three field plots that elucidated the connections among sources, countries, organizations, affiliations, and keywords. Each plot features colored rectangles whose height indicates the intensity of their association with others.

Figure 11 shows the Sankey diagram for polyvictimization created between author keywords (left), author (middle) and source (right). To enhance the visualization of potential components, we limited the keywords count, keywords, and sources to 15. It can be observed that the most frequent keywords were “polyvictimization”, “victimization”, and “polyvictimization”, and authors were Pereda N., Guilera G., and Ford JD., mainly published their work in sources such as, Child abuse and Neglect, Journal of Interpersonal Violence, and Child maltreatment.

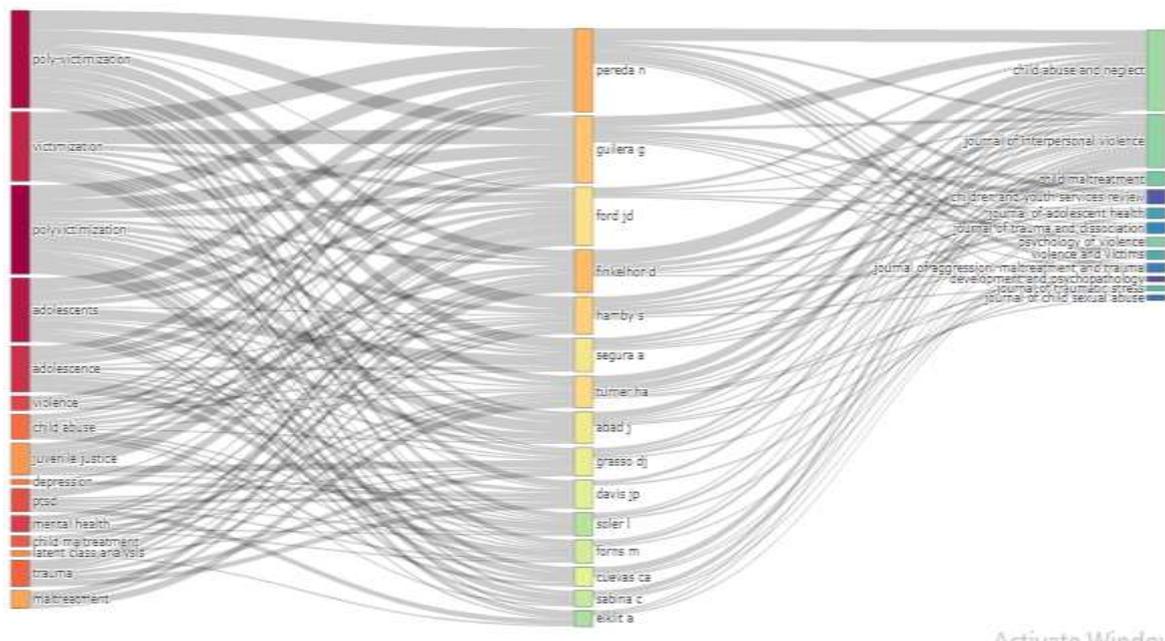


Figure 11. Three field plots between keywords (left), authors (middle) and sources (right)

Another three field plots explaining the relationship between authors (left), countries (middle) and keywords as shown in figure 12. The information for most productive authors, their affiliated countries and their research area can be visible with the help of rectangle size of each component. Moreover, the graph was generated by considering the number of countries, authors, and keywords as 15. Furthermore, it can be seen that most productive authors are from USA, Spain and Canada, and their potential area are polyvictimization, poly-victimization, and adolescents.

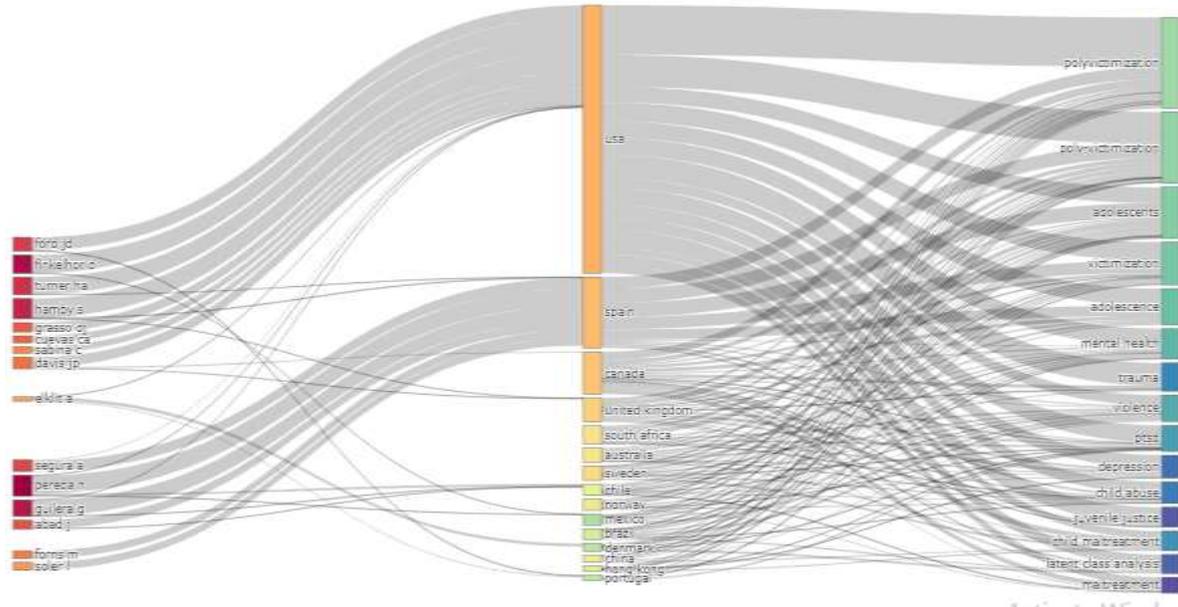


Figure 12. Three fields plot between author (left), countries (middle), and keywords (right)

Furthermore, figure 13 below explains the relationship between the most prolific institutions, their top productive authors and the sources where they are publishing their work. Three fields plot were created by considering 15 institutions (left), authors (middle) and sources (right). The most profound authors are Pereda N., Guilera G., and Segura A., have their affiliations from institutions like Universitat de Barcelona, University of New Hampshire, and University of Southern California. These institutions have their prolific authors to publish their research work in Child Abuse and Neglect, Journal of Interpersonal Violence, and Child Maltreatment.

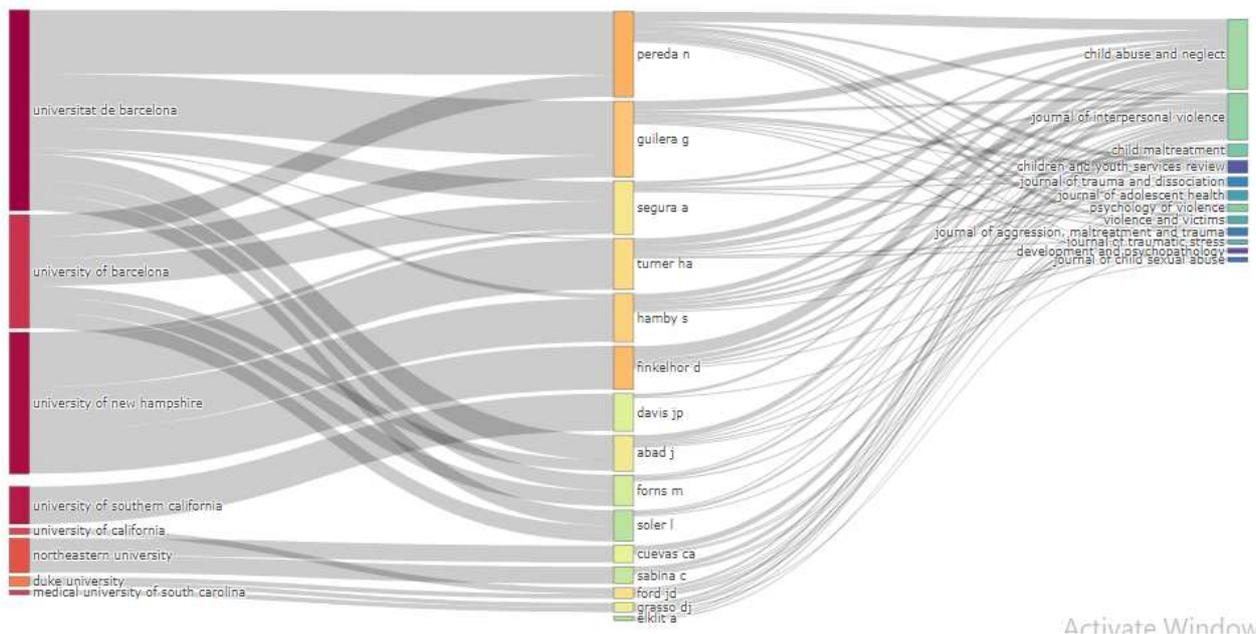


Figure 13. Three fields plot between institutions (left), authors (middle), and sources (left).

Trending Topics and Research Hotspot

Based on the occurrence frequency of authors keywords, the trending research areas allied with polyvictimization for each specific year are shown below in figure 14. A total of 13 keywords involves from 2016-2022. The size of circle refers to the occurrence frequency of author keyword.

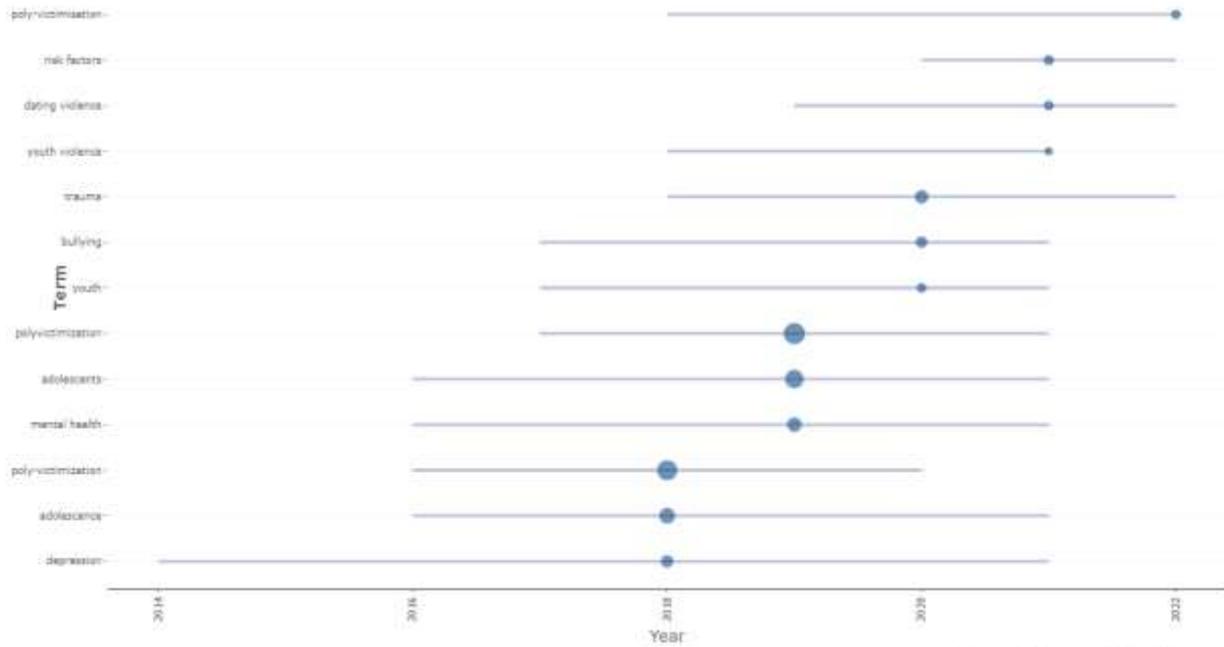


Figure 14. Trending topics in concerned research area.

DISCUSSION

The present bibliometric analysis provides more than a descriptive mapping of the literature on polyvictimization and adolescent mental health; it reveals the structural evolution, epistemic shifts, and policy relevant implications of this research domain over the past two decades. The marked increase in publications, particularly after 2014 and accelerating sharply from 2017 onward, suggests not merely growing academic curiosity but a paradigmatic shift in how victimization is conceptualized within developmental psychopathology and public health research.

One plausible explanation for the post-2014 surge in publications is the consolidation of polyvictimization as a distinct construct rather than a peripheral extension of child maltreatment research. Earlier victimization studies often examined single categories of abuse in isolation. However, accumulating empirical evidence demonstrating cumulative and synergistic trauma effects likely catalyzed a shift toward integrative frameworks. The rise in citation impact during 2015–2018 further suggests that foundational works during this period shaped the theoretical and methodological direction of the field. Highly cited contributions by scholars such as Finkelhor and Turner indicate that the operationalization of polyvictimization, particularly through instruments like the Juvenile Victimization Questionnaire provided the field with reliable measurement tools, thereby facilitating large-scale epidemiological and longitudinal investigations.

The steep growth in publications between 2020 and 2023 may also reflect contextual and societal catalysts. The COVID-19 pandemic exposed structural vulnerabilities within families and communities, including increased domestic violence, online exploitation, and psychosocial distress among youth. Although bibliometric data cannot establish causation, the temporal alignment suggests that global crises may intensify scholarly attention toward compounding adversities and their mental health consequences. This pattern underscores how research trajectories are often responsive to broader socio-political and public health contexts.

Geographically, the dominance of the United States in publication volume and citation impact reflects strong institutional infrastructure, funding mechanisms, and long-standing national surveys on child victimization. However, the growing contributions from Spain, Canada, the United Kingdom, South Africa, and parts of Asia indicate an expanding global recognition of polyvictimization as a cross-cultural public health issue. Importantly, the co-authorship networks reveal increasing international collaboration, suggesting a move toward comparative and transnational perspectives. Such collaboration is critical because patterns of victimization, reporting practices, and cultural interpretations of trauma differ significantly across contexts. Future research would benefit from strengthening contributions from low- and middle-income countries, where adolescents may experience high cumulative adversity but remain underrepresented in global data.

The co-occurrence analysis of author keywords provides further insight into the conceptual maturation of the field. Early research clusters focused primarily on abuse typologies and prevalence estimation. Over time, however, thematic expansion toward mental health outcomes, including depression, anxiety, PTSD, suicidal ideation, substance use, and resilience signals a shift from descriptive epidemiology to explanatory and outcome-oriented inquiry. The emergence of keywords such as “resilience,” “protective factors,” “social support,” and “quality of life” indicates a gradual movement toward strengths-based and intervention-informed perspectives rather than exclusively deficit-oriented frameworks.

From a prevention standpoint, the bibliometric patterns highlight an important conceptual implication: polyvictimization research consistently demonstrates that victimization experiences are interconnected rather than isolated events. This has direct implications for screening and assessment strategies. Traditional intervention systems often operate in silos (e.g., child protection, juvenile justice, school counseling). However, the clustering of victimization types observed in empirical studies suggests that prevention programs must adopt integrated, trauma-informed, and cross-sectoral approaches. Universal screening tools in schools and primary healthcare settings should assess cumulative victimization exposure rather than single-event trauma to prevent under-identification of high-risk adolescents.

Moreover, the strong association between polyvictimization and internalizing and externalizing disorders underscores the need for early secondary prevention models. Bibliometric evidence showing increasing research on suicidal behavior, substance use, and delinquency implies that untreated cumulative trauma may manifest in complex comorbidities. Thus, intervention frameworks should incorporate trauma-focused cognitive behavioral therapy (TF-CBT), resilience-building programs, and family-based interventions tailored for youth exposed to multiple adversities. Importantly, prevention strategies must move beyond reactive responses and address upstream determinants such as poverty, community violence, digital exploitation, and structural inequities.

Another critical implication emerging from the institutional and country-level analysis concerns knowledge concentration. A relatively small number of institutions and authors account for a substantial proportion of high-impact publications. While this concentration reflects academic leadership, it also signals potential epistemic centralization. Expanding collaborative networks to underrepresented regions would enhance ecological validity and cultural responsiveness of intervention frameworks. Policymakers should therefore encourage international research partnerships and capacity-building initiatives in regions where adolescent victimization remains insufficiently documented.

Finally, this bibliometric synthesis reveals both maturity and gaps within the field. Although publication volume has increased significantly, longitudinal and intervention-based studies remain comparatively fewer than cross-sectional analyses. The next phase of research should prioritize implementation science, culturally adapted prevention models, and evaluation of trauma-informed policies at school and community levels. Additionally, digital victimization and cyber-exposure emerging prominently in keyword clusters require more targeted investigation given adolescents’ increasing online engagement.

In conclusion, the growth trajectory of polyvictimization research reflects a broader shift in adolescent mental health scholarship toward recognizing cumulative adversity as a central determinant of psychological outcomes. The field has transitioned from documenting prevalence to examining mechanisms and outcomes; however, translating this knowledge into scalable prevention and intervention frameworks remains an urgent

priority. Future scholarship must integrate epidemiological evidence with applied program development to ensure that bibliometric expansion corresponds with meaningful improvements in adolescent mental health practice and policy.

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Competing Interests

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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Ethical Approval

Not Applicable

Informed Consent

Not Applicable

Author's Contribution

All authors contributed to the study conception and design. Material preparation and analysis were performed by Syed Faraz Ali and Aqeel Khan. The first draft of manuscript was written by Syed Faraz Ali and all authors commented on previous version of the manuscript. All authors read and approved the final manuscript.

Data Availability Statement

Not Applicable

Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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