



ORIGINAL

## A Bibliometric Analysis of Juvenile Crimes and Psychological Well-Being: Trends, Patterns, and Gaps in Research

### Un análisis bibliométrico del crimen juvenil y bienestar psicológico: tendencias, patrones y vacíos en la investigación

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#### ABSTRACT

**Introduction:** adolescent criminal behaviour is considered to be a serious global societal concern, with adverse physical and psychological effects for both the victims as well as the perpetrators. According to studies, incarcerated adolescents experience a greater risk of mental illnesses than the overall juvenile population. Approximately 14 % to 20 % of young individuals in the general population are diagnosed with a mental condition, with 9 % to 13 % experiencing severe emotional distress. The current study aims to find the patterns of previously existing literature associating Juvenile Crimes and Psychological Well-Being.

**Method:** after screening the units through a Prisma model, 1068 documentary units were included for further analysis. The documentary units were analysed using VOS Viewer Software and Hazing's Publish and perish software.

**Results:** from the results it was found that the United States secured the top ranking in terms of the number of papers and citations with over 862 papers and 26544 citations with medicine being the top contributing area. The current study also identified top authors, journals and research papers that were the major contributors in the area. Further bibliometric analysis showed the collaboration between different authors, journals, themes and organizations.

**Conclusion:** the study gives an overall understanding about the various research as well as various aspects with which researchers have studied the current area. The research gap is evident from the number of publications as well as the areas in which the research has been looked into which thereby lays the platform for future studies.

**Keywords:** Juvenile; Crimes; Psychological Well-Being; Mental Health; Bibliometric Analysis.

#### RESUMEN

**Introducción:** la conducta delictiva de los adolescentes se considera una preocupación social mundial grave, con efectos físicos y psicológicos adversos tanto para las víctimas como para los perpetradores. Según los estudios, los adolescentes encarcelados experimentan un mayor riesgo de enfermedades mentales que la población juvenil en general. Aproximadamente entre el 14 % y el 20 % de los jóvenes de la población general son diagnosticados con una enfermedad mental, y entre el 9 % y el 13 % experimentan angustia emocional

grave. El presente estudio tiene como objetivo encontrar los patrones de la literatura previamente existente que asocia los delitos juveniles y el bienestar psicológico.

**Método:** luego de cribar las unidades a través de un modelo Prisma, se incluyeron 1068 unidades documentales para su posterior análisis. Las unidades documentales fueron analizadas utilizando el software VOS Viewer y el software Publish and perish de Hazing.

**Resultados:** de los resultados se encontró que Estados Unidos obtuvo la clasificación más alta en términos de número de artículos y citas con más de 862 artículos y 26544 citas, siendo la medicina el área que más contribuye. El estudio actual también identificó a los principales autores, revistas y artículos de investigación que fueron los principales contribuyentes en el área. Un análisis bibliométrico adicional mostró la colaboración entre diferentes autores, revistas, temas y organizaciones.

**Conclusiones:** el estudio brinda una comprensión global sobre las diversas investigaciones, así como los diversos aspectos con los que los investigadores han estudiado el área actual. La brecha en la investigación es evidente por el número de publicaciones, así como por las áreas en las que se ha investigado, lo que sienta la plataforma para futuros estudios.

**Palabras clave:** Juvenil; Delitos; Bienestar Psicológico; Salud Mental; Análisis Bibliométrico.

## INTRODUCTION

Adolescent criminal behaviour is considered to be a serious global societal concern, with adverse physical and psychological effects for both the victims as well as the perpetrators.<sup>(1)</sup> Juvenile delinquency refers to a young individual who has engaged in an unlawful act, although the exact definition differs depending on the administrative jurisdiction. The exact origins of these variances have been unknown, although they tend to result from the absence of an agreed-upon global norm.<sup>(2)</sup> Although rates of juvenile delinquency vary by the nation, reactions to antisocial acts done by the young people, governments across the world share a desire to reduce crime. Incarceration is a typical reaction to crime. Nonetheless, there exists profound evidence that imprisonment is an ineffective reaction towards juvenile unlawful activity and it is deemed to be counterproductive towards criminal activity.<sup>(3)</sup>

According to the United Nations Guidelines for the Prevention of Juvenile Delinquency, preventing juvenile delinquency demands society's united efforts to assure adolescents' holistic development while valuing and fostering their individuality from an early age. This requires tight multidisciplinary collaboration between national, state, provincial, and municipal governments, as well as participation from the commercial sector, community leaders, labour, childcare, health education, social services, law enforcement, and judicial authorities. Working together, these organisations may take united action to address juvenile delinquency and young criminality.<sup>(4)</sup>

According to studies, incarcerated adolescents experience a greater risk of mental illnesses when compared to the overall population. Approximately 14 % to 20 % of young individuals in the general population are diagnosed with a mental condition, with 9 % to 13 % experiencing severe emotional distress.<sup>(5)</sup> Numerous risk factors have been found for teenage boys implicated in homicide, including familial, peers, school, and societal influences. Some of the risk factors of individuals include mental health disorders, poor executive function, and developmental maturity.<sup>(6)</sup> In this setting, juvenile is defined as someone who is liable legally for committing an unlawful act as they are above the requisite age of criminal responsibility but are under the legal age at which they are considered to be an adult, which is known as the age of criminal majority. The minimum age for criminal obligation tends to vary by nation, between 6 years to 18 years, while the age of criminal majority is often eighteen. An individual is considered as a delinquent if he/she has committed a criminal crime. Delinquency therefore tends to include a wide range of behaviors that are deemed to be unlawful and regulated differently in different jurisdictions and are subject to modifications over time in the law.<sup>(7)</sup>

When analysing juvenile crimes, criminal behaviour of young people emerges, and this affects not only the perpetrator but also the victim and others around them, with serious implications. The goal of this research is to examine publishing patterns and regional distribution using data collected over the years. Furthermore, it seeks to investigate collaboration efforts across authors and nations, as well as the interaction of referenced texts, with a special emphasis on the subjects of juvenile criminality and psychological well-being. Finally, the study aims to provide a thorough knowledge and critical analysis of the literature from 2000 to 2023 within the Scopus database, offering insight of the current research environment in this field.

The following are the research questions of the study.

- RQ1: What are the publication trends in the area of Juvenile crimes and Psychological well-being?
- RQ2: What are the areas that gave importance to studies on the topic juvenile crime and psychological well-being?

- RQ3: What are the key publications and organisations that have made significant contributions to the field of juvenile crime and psychological well-being?
- RQ4: What are the top recognised researches that were done in the area of juvenile crimes and Psychological Well-being?
- RQ5: What is the present state of research collaboration between co-authors and their respective nations and organisations?
- RQ6: What themes emerge from the existing literature on juvenile crimes and psychological well-being?
- RQ 7: Do different research papers influence each other?

## METHOD

The raw units for the particular variables were extracted from the Scopus database. Scopus was chosen as it is determined to be the biggest database of citations and abstracts from peer-reviewed literature and covers a wide range of study topics, including arts and humanities, social science, medical, technology, and science. Relevant keywords, along with appropriate Boolean operators, were utilized to retrieve research papers focusing on juvenile crimes and psychological well-being. Terms such as “juvenile crime,” “youth crime,” “youth violence,” “teenage offenders,” “delinquent youth,” “juvenile offenders,” “juvenile justice,” and “juvenile arrest” were employed for juvenile crimes. Meanwhile, terms including “psychological well-being,” “mental health,” “psychological distress,” “mental wellness,” “psychological adjustment,” and “mental well-being” were utilized for psychological well-being. The bibliometric study focused on analysing research publications that were, in the final stage of publication, written in English and specifically published in journals. Using the mentioned keywords, a total of 1454 documents from the Scopus database between 2000 and 2023 were extracted, out of which 386 papers were excluded. The PRISMA guidelines were employed to extract, screen, select, and include relevant literature. <sup>(8)</sup>

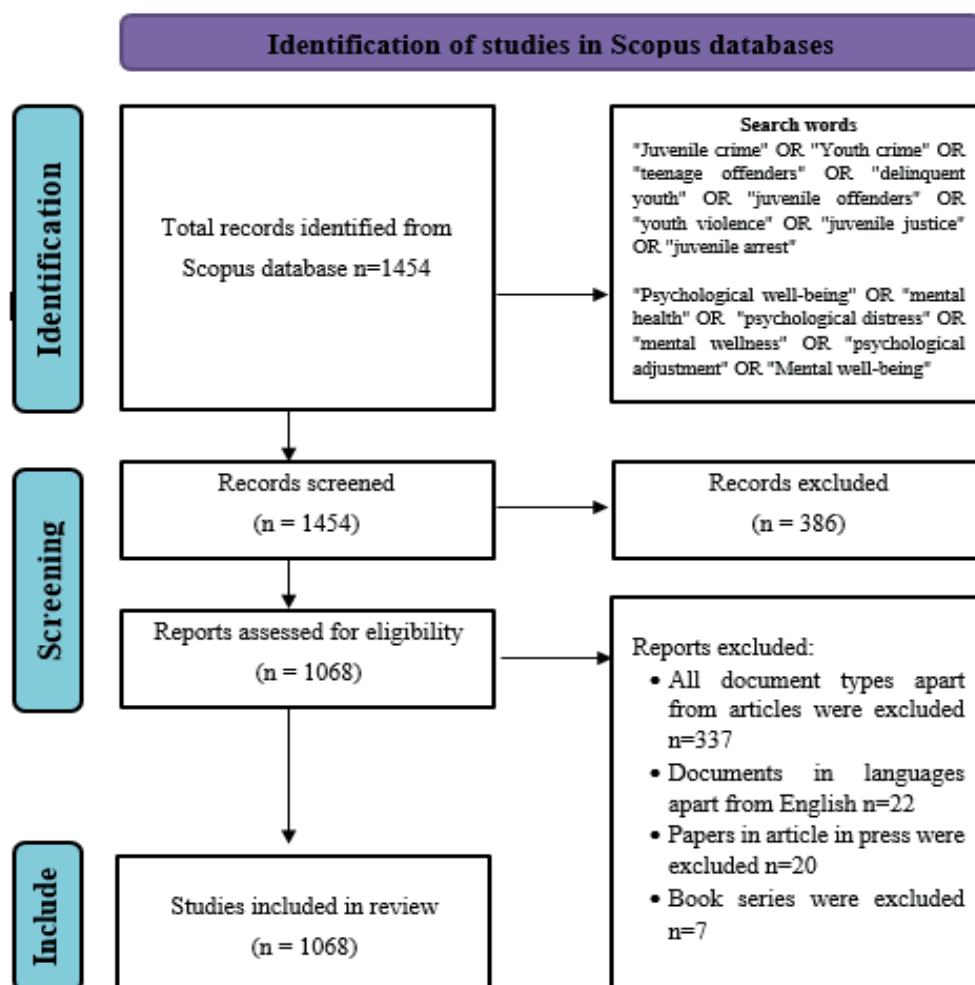


Figure 1. The PRISMA method was used to describe the procedures in identifying and selecting the research papers <sup>(8)</sup>

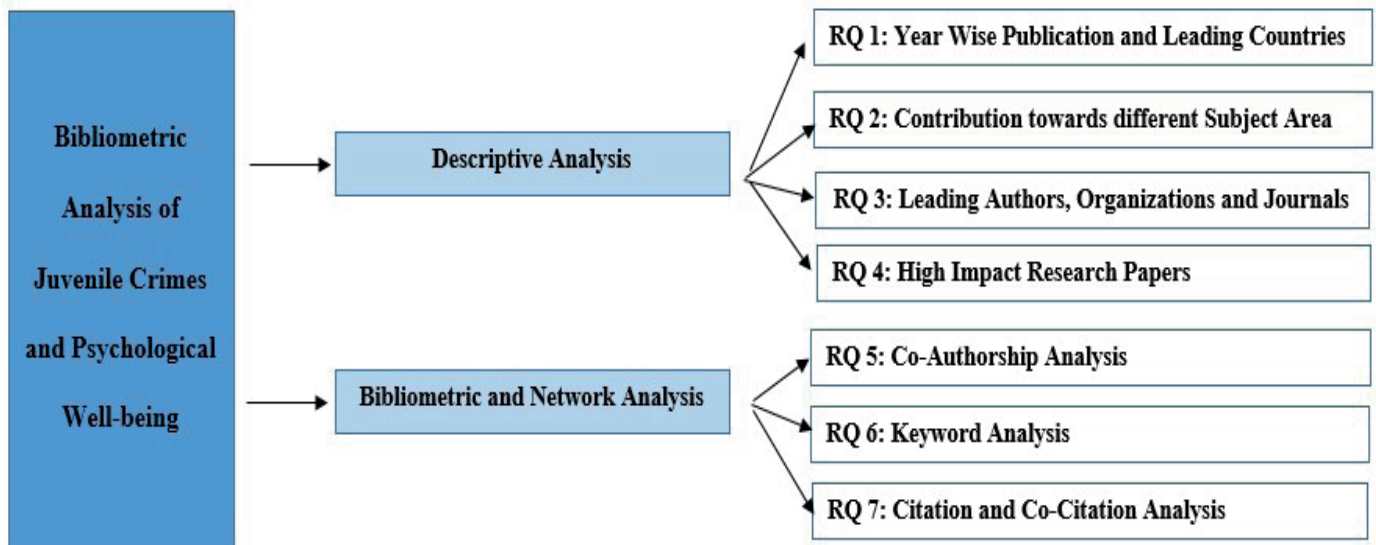


Figure 2. Analytical framework of our study

**RESULTS**

**RQ1: What are the publication trends in the area of Juvenile crimes and Psychological well-being?**

The initial research question seeks to explore the evolving research trends across countries throughout the years. This analysis will shed light on how various nations and academic journals have perceived the importance of understanding delinquency and mental well-being, as well as whether there has been a growing interest in studying this field over time. Table 1 displays the work conducted between 2014 and 2023. The data reveals a surge in publications from 2020 to 2022, although there was a decrease in publications from 8 to 5 percent in 2023, with 54 papers published in the Scopus database. Table 2 provides insights into the ten countries based on their publications and citations received. The United States secured the top ranking with over 862 papers, followed by Australia with over 45 papers in total. Canada secured the 3rd ranking by publishing over 41 research papers in this particular area of study. Other countries such as the Netherlands (32), United Kingdom (29), Switzerland (13), Germany (11), New Zealand (11), South Korea (11) and Spain (11) also had a considerable impact on the area of study. In order to understand the total impact of the papers published in these countries, the total citation score of these countries was estimated. The United States had a total citation score of over 26544, thereby being the top country to have an impact on the papers generated. The Netherlands and Canada were ranked 2nd and 3rd with over 1255 and 975 cases, respectively. Other countries, such as Australia (771), the United Kingdom (475), New Zealand (447), Spain (220), South Korea (188), Sweden (166) and Switzerland (149), thereby having immense influence on understanding the depths of juvenile crimes and psychological well-being.

S.No	Year	No. of publications	Percentage
1.	2023	54	5
2.	2022	82	8
3	2021	74	7
4	2020	53	5
5	2019	58	5
6	2018	46	4
7	2017	66	6
8	2016	49	5
9	2015	51	5
10	2014	58	5

Documents by year

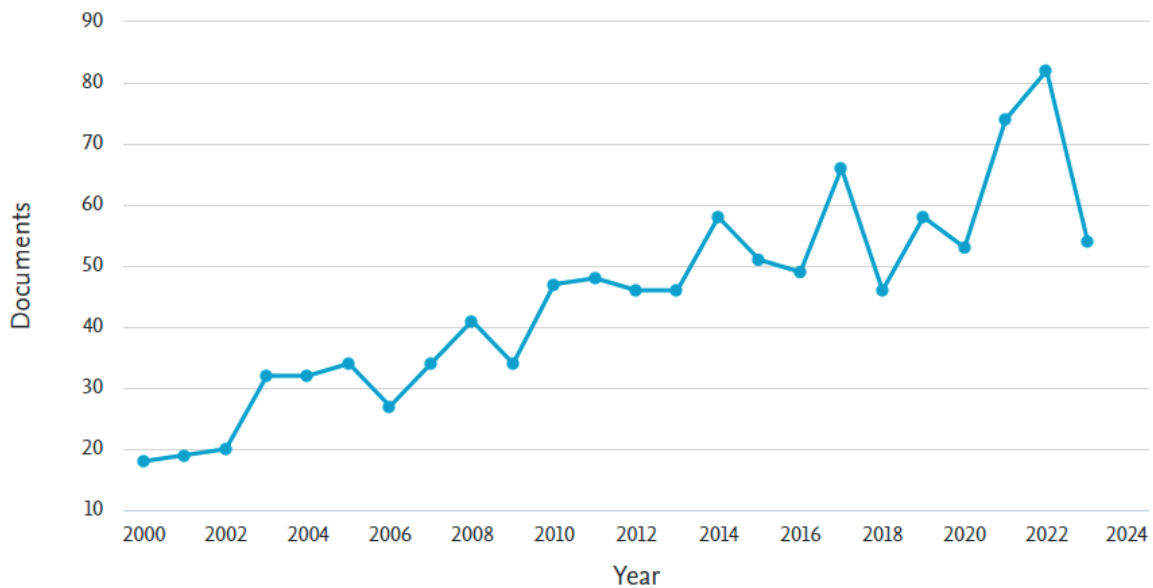


Figure 3. Distribution of research papers throughout the years

Rank	Country	TP	Rank	Country	TC
1	United States	862	1	United States	26544
2	Australia	45	2	Netherlands	1255
3	Canada	41	3	Canada	975
4	Netherlands	32	4	Australia	771
5	United Kingdom	29	5	United Kingdom	475
6	Switzerland	13	6	New Zealand	447
7	Germany	11	7	Spain	220
8	New Zealand	11	8	South Korea	188
9	South Korea	11	9	Sweden	166
10	Spain	11	10	Switzerland	149

**RQ2: What are the areas that gave importance to studies on the topic juvenile crimes and psychological well-being?**

To understand the overall advancement of knowledge and assist researchers from various fields in bridging the gap in the existing literature, it is important to identify the top subject areas that have immensely contributed to understanding juvenile crimes and psychological well-being. Table 3 reveals that the subject area with the highest contribution is Medicine, with 614 (33 %) research papers, followed by Psychology with 531 (29 %) research papers, and Social Sciences with 493 (27 %) research papers. Nursing and Arts & humanities had a small contribution, with total publications of 85 (5 %) and 61 (3 %) respectively, thereby enumerating the need for these subject areas to generate more knowledge on the prevailing requirements to understand the area under study.

Rank	Subject area	TP	Percentage
1	Medicine	614	33
2	Psychology	531	29
3	Social Sciences	493	27
4	Nursing	85	5
5	Arts and Humanities	61	3

**RQ3: What are the key publications and organisations that have made significant contributions to the field of juvenile crime and psychological well-being?**

**Table 4.** Top 10 authors and organisations with the most number of publications

Rank	Author Name	No. of publications	Percentage	Organization	Total Publication	Percentage
1	Tolou-Shams, M.	26	3	University of South Florida, Tampa	36	2
2	Aalsma, M.C.	15	2	Columbia University	34	2
3	Wasserman, G.A.	15	2	University of California, Los Angeles	29	2
4	Kemp, K.	14	2	The Warren Alpert Medical School	28	2
5	Brown, L.K.	13	2	Brown University	27	2
6	McReynolds, L.S.	13	2	University of Pittsburgh	26	2
7	Cauffman, E.	12	1	University of Washington	25	2
8	Abram, K.M.	11	1	University of California, San Francisco	24	2
9	Dembo, R.	11	1	Rhode Island Hospital	23	2
10	Teplin, L.A.	11	1	University of Michigan, Ann Arbor	23	2

**Table 5.** Top 10 journals with the most number of publications

Rank	Source	No. of Publication	Percentage
1	Journal Of Interpersonal Violence	47	5
2	Children And Youth Services Review	41	5
3	Criminal Justice And Behavior	33	4
4	Youth Violence And Juvenile Justice	28	3
5	Journal Of Child And Family Studies	23	3
6	Journal Of The American Academy Of Child And Adolescent Psychiatry	20	2
7	Administration And Policy In Mental Health And Mental Health Services Research	18	2
8	American Journal Of Orthopsychiatry	18	2
9	International Journal Of Forensic Mental Health	15	2
10	Journal Of Child And Adolescent Trauma	15	2

According to the Scopus database, 3046 authors from 2647 organisations contributed to research publications in this topic. In response to Research question 3 table 4 looks towards identifying the Top 10 authors as well as organisations that have had a great attribution towards generating knowledge in the area of juvenile crime and psychological well-being. The number of Publications by the top 10 authors ranges between 26 to 11. The highest number of articles was published by the author Tolou-Shams (26) followed by Aalsma (15) and Wasserman (15). University of south Florida (36), Columbia University (34), and University of California (29) were the top three organisations that contributed to the study. Table 5 determines the top journals that contributed to the literature extracted. Journal of interpersonal violence, Children and Youth Services Review and Criminal Justice and Behavior generated 47 (5), 41 (5) and 33 (4) respectively.

**RQ4: What are the top recognised researches that were done in the area of juvenile crimes and Psychological Well-being?**

The table 6 determines the high impact papers published by different authors and the journals in which it was published in published a paper on “Psychiatric disorders in youth in juvenile detention” which stated that imprisoned children show perilously high incidence of mental health problems, with over two-thirds of boys as well as three-quarters of females fulfilling the diagnostic criteria for any kind of mental health condition. These high rates were found to provide issues for the juvenile justice and many mental health systems in terms of resource allocation and service delivery. <sup>(10)</sup>

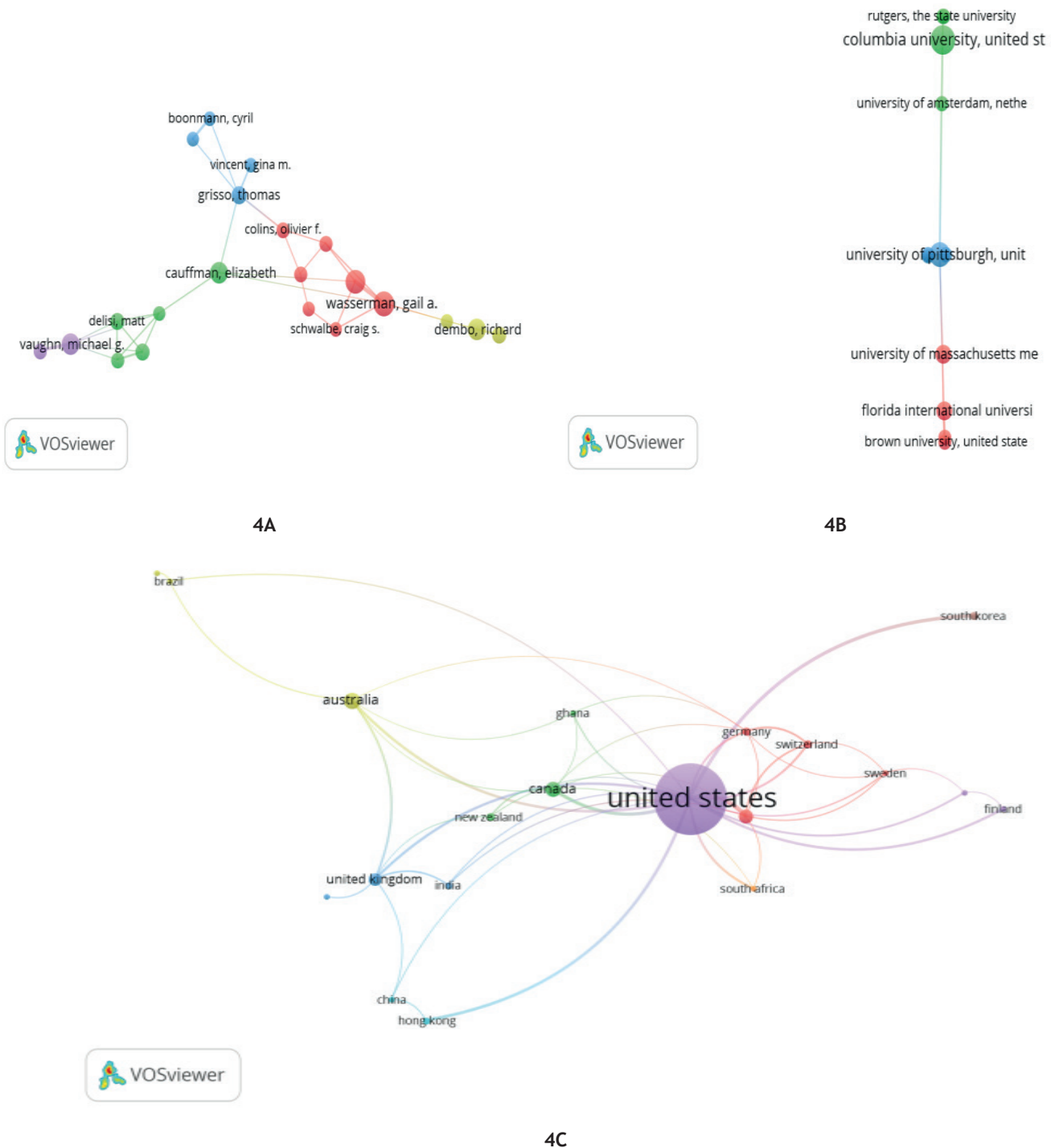
Table 6. Top 10 research papers with the highest number of citations

Cites/ year	Citation	Authors	Year	Journal	Title
60,32	1327	L.A. Teplin, K.M. Abram, G.M. McClelland, M.K. Dulcan, A.A. Mericle	2002	Archives of General Psychiatry	Psychiatric disorders in youth in juvenile detention <sup>(10)</sup>
81,5	815	P.J. Frick, J.V. Ray, L.C. Thornton, R.E. Kahn	2014	Psychological Bulletin	Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review <sup>(11)</sup>
37,38	785	M. Nation, C. Crusto, A. Wandersman, K.L. Kumpfer, D. Seybolt, E. Morrissey-Kane, K. Davino	2003	American Psychologist	What Works in Prevention: Principles of Effective Prevention Programs <sup>(12)</sup>
25	600	R. Loeber, D.P. Farrington	2000	Development and Psychopathology	Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications <sup>(13)</sup>
32,06	513	S.J. Ko, J.D. Ford, N. Kassam-Adams, S.J. Berkowitz, C. Wilson, M. Wong, M.J. Brymer, C.M. Layne	2008	Professional Psychology: Research and Practice	Creating Trauma-Informed Systems: Child Welfare, Education, First Responders, Health Care, Juvenile Justice <sup>(14)</sup>
20,39	469	A.F. Garland, R.L. Hough, K.M. McCabe, M. Yeh, P.A. Wood, G.A. Aarons	2001	Journal of the American Academy of Child and Adolescent Psychiatry	Prevalence of psychiatric disorders in youths across five sectors of care <sup>(15)</sup>
20,57	432	E.M.Z. Farmer, B.J. Burns, S.D. Phillips, A. Angold, E.J. Costello	2003	Psychiatric Services	Pathways into and through mental health services for children and adolescents <sup>(16)</sup>
19,24	404	K.M. Abram, L.A. Teplin, G.M. McClelland, M.K. Dulcan	2003	Archives of General Psychiatry	Comorbid Psychiatric Disorders in Youth in Juvenile Detention <sup>(17)</sup>
18,42	350	A.F. Garland, A.S. Lau, M. Yeh, K.M. McCabe, R.L. Hough, J.A. Landsverk	2005	American Journal of Psychiatry	Racial and ethnic differences in utilization of mental health services among high-risk youths <sup>(18)</sup>
29,64	326	C.B. Dierkhising, S.J. Ko, B. Woods-Jaeger, E.C. Briggs, R. Lee, R.S. Pynoos	2013	European Journal of Psychotraumatology	Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network <sup>(19)</sup>

In 2014 conducted a study on “Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents?” which stated that youth with callous-unemotional features and severe behavioural difficulties are an essential category to identify since they tend to require specialised diagnostic and treatment techniques. <sup>(11)</sup> Further investigation was done with the work “What Works in Prevention: Principles of Effective Prevention Programs” which instigated that early implementation of comprehensive, evidence-based preventive programmes can assist to reduce delinquency and substance addiction among at-risk kids. <sup>(12)</sup> In “Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications” in American Psychologist which also state that early intervention is crucial, since evidence indicates that delinquency before the age of 13 is associated with more chronic and significant offending later. <sup>(13)</sup> However, many of these high-risk adolescents have been traumatised, which has an influence on their ability to function. Thus, instigating trauma-informed care throughout child welfare systems is advocated to promote recovery. <sup>(14)</sup> These studies thus state that a multifaceted, coordinated strategy is required to screen for mental health needs and trauma early, appropriately diagnose and treat high-risk populations, and implement targeted, trauma-informed preventative programmes to enhance outcomes for justice-involved kids.

#### RQ5: What is the present state of research collaboration between co-authors and their respective nations and organisations?

The VOS software was utilized to identify the collaborations among various authors and the countries they represent.



**Figure 4.** Distribution of research papers throughout the years

Figure 4A illustrates collaborations among various authors contributing to the literature. VOS software was employed to generate the visualization, while fractional counting was utilized to assess the contribution of different authors. Documents authored by more than 25 individuals were omitted from the analysis. From the identified 3046 authors, 67 met the threshold criteria. These authors were categorized into five clusters with 21 items that connected. Figure 4B examines the collaboration among authors from different organizations. Fractional counting was utilized to assess the contribution of these individual organizations. Documents authored by a large number of organizations were excluded from the analysis. Each document that was included in the analysis had a minimum involvement of two organizations. With this criterion, among the 2647 organizations, 170 organizations were identified in which 12 organizations connected, forming three clusters, with four organizations in each of these clusters. Figure 4C illustrates the collaboration between different countries concerning juvenile crimes and psychological well-being. The minimum number of contributions from different



countries in each document was considered to be 5, resulting in 21 documents meeting the threshold out of 102 countries. Twenty items are connected in eight clusters, with four items in the first cluster, three items in the second, third, and fourth clusters, and five items in the fifth cluster. The sixth cluster comprises two countries, while the seventh and eighth clusters each contain one item.

#### RQ6: What themes emerge from the existing literature on juvenile crimes and psychological well-being?

A total of 1898 keywords were identified from the extracted literature. Out of these 1898 keywords 130 met the threshold clusters considering the number of occurrences of a Keyword to be 5 which was divided into 13 clusters. The figure 5 shows the collaboration between different keywords. The cluster 1 had 20 keywords which were Adolescence, criminal justice, detention, disability, education, evidence-based practice, implementation science, juvenile correction, juvenile justice system, mental health screening, mental health services, policy, Qualitative research, re-entry, resilience, service delivery, special education, suicide, young people and youth. Cluster 2 had 18 keywords which were Adolescents, Alcohol, Conduct disorder, Drug use, Drugs, Ethnicity, Gender, Incarceration, Juvenile delinquents, Juvenile offenders, Juvenile offender, Mental disorder, Prevalence, Psychiatric Disorder, Race, Risk Factors, Traumatic Brain Injury and Young Adults. Cluster 3 had 13 items which are Abuse, Adolescent Offenders, Anxiety, Depression, Female Juvenile offenders, girls, Justice - Involved Youth, Maysi-2, Mental Health Problems, Psychopathy, Screening, Treatment, and delinquent. Cluster 4 had 13 items which were Adolescent health, Bullying, Child Abuse, Community Violence, Cultural Contexts, Dating Violence, Domestic Violence, Mental Health and Violence, Psychological distress, Race/Ethnicity, Victimization, Violence exposure and Youth Violence.

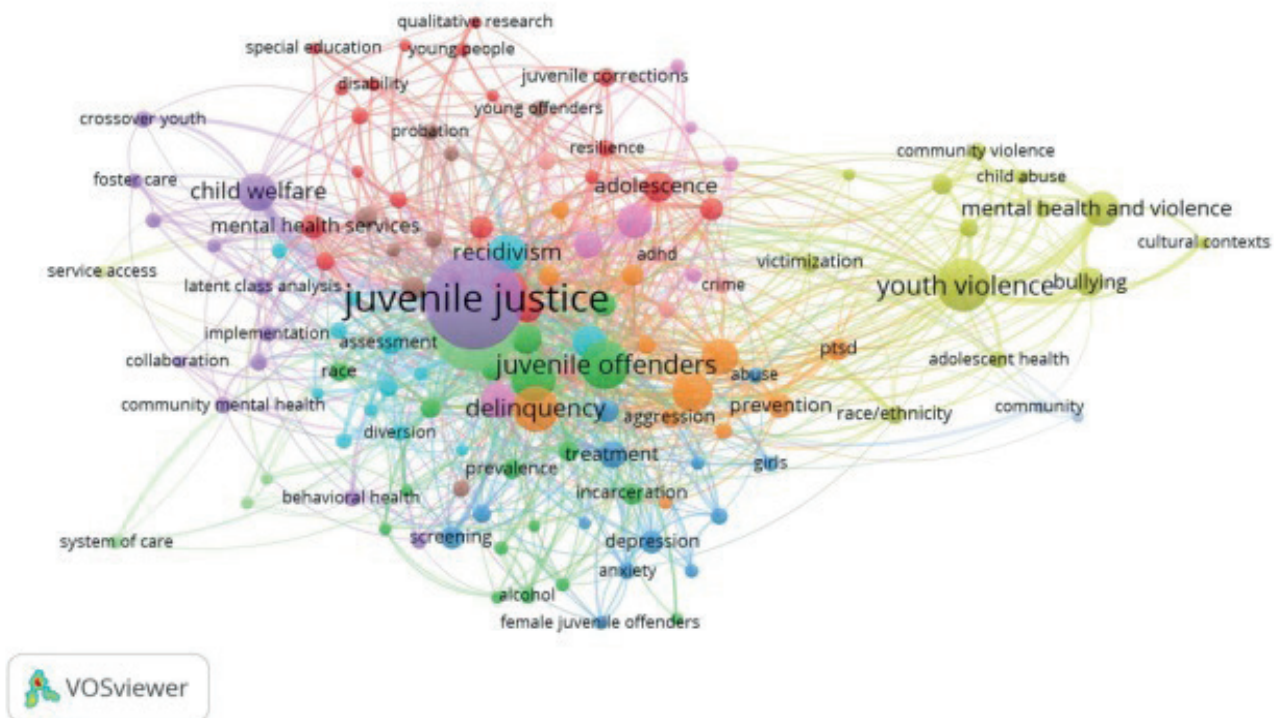


Figure 5. Distribution of Keywords of Juvenile crime and Psychological Well-Being

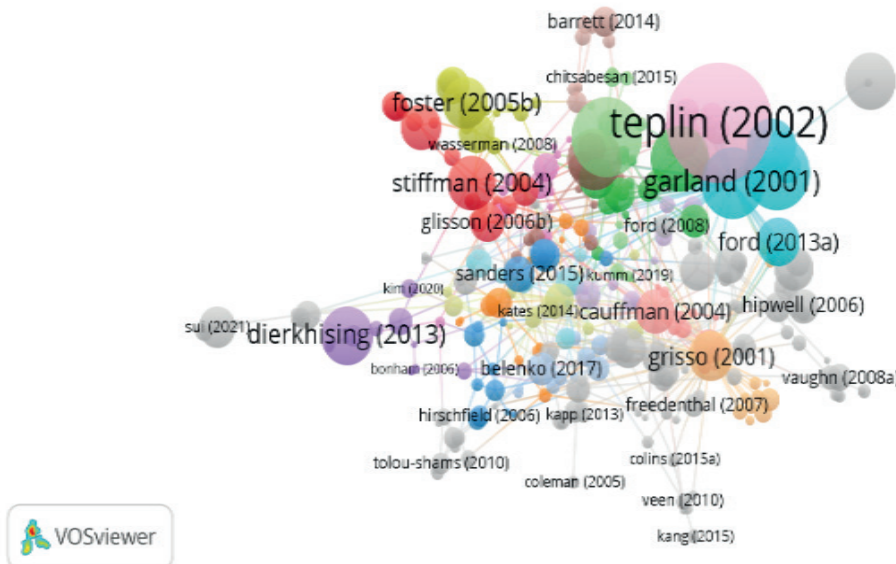
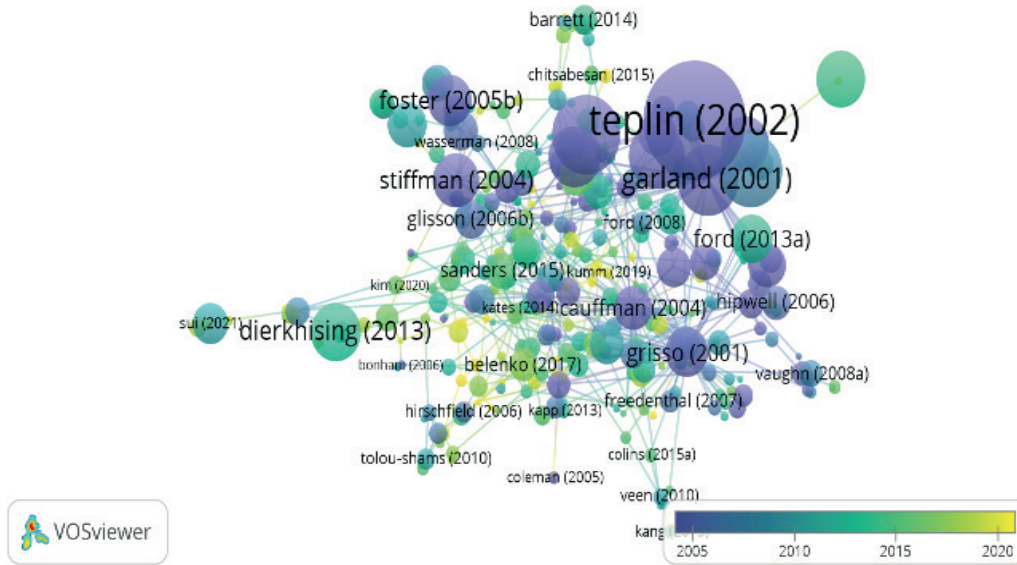
Cluster 5 had 13 keywords which are behavioral health, child welfare, collaboration, community mental health, crossover youth, foster care, implementation, juvenile justice, latent class analysis, multisystemic therapy, program evaluation, residential care and substance use disorders. Cluster 6 had 13 keywords which are Assessment, child maltreatment, children, diversion, evidence-based practice, families, juvenile detention, mental health treatment, outcomes, recidivism, residential treatment, substance abuse treatment, substance use. Cluster 7 had 12 keywords which are adverse childhood experience, aggression, delinquency, gender differences, intervention, maltreatment, prevention, psychopathology, ptsd, service utilization, trauma, violence. Cluster 8 had 9 keywords which are african americans, co-occurring disorders, juvenile, juvenile court, juveniles, mental illness, probation, risk assessment, young offenders. Cluster 9 had 7 keywords which are Adolescent, adolescent mental health, female, juvenile delinquency, juvenile delinquent, substance abuse, suicidal ideation. Cluster 10 had 5 keywords which are Adhd, comorbidity, crime, psychiatric disorders and service use. Cluster 11 had 4 keywords which are mental health, meta-analysis, system of care, wraparound.

Cluster 12 had 2 keywords which are Community, violence prevention. Cluster 13 had 1 keyword which is Service access.

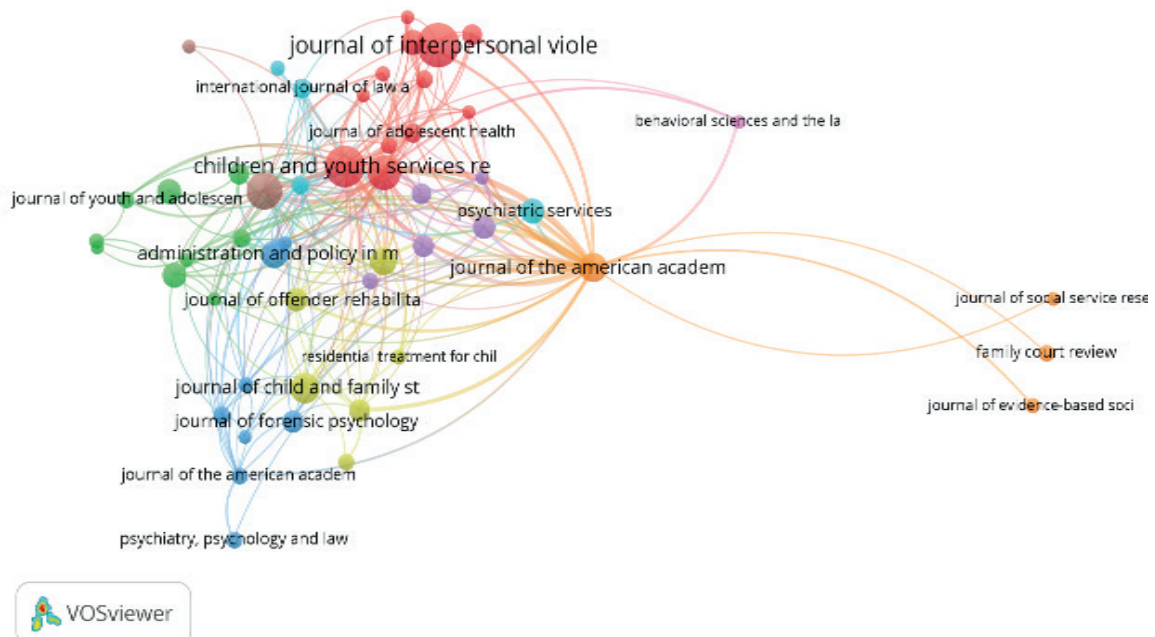
Keywords	Occurrence	Definition
Juvenile Justice	276	It is defined as the set of guidelines, laws, policies, and procedures that is used in order to determine the processing and treatment of juvenile offenders who commit wrongdoings and thereby put under special hearings and sentencing to distinguish them from their adult counterparts. <sup>(2)</sup>
Mental Health	220	Mental health is described as an individual's thoughts and feelings about themselves and their situations, as well as how they cope with and handle difficulties. Mental health are the factors that affect a person's ability to function well and to use the opportunities available to them to their fullest potential within the family, workplace, community and peers. <sup>(20)</sup>
Youth Violence	83	Youth violence is defined as violence which happens between persons Aged 10-29 years, unrelated, who may or may not know one other. It involves a wide variety of behaviours, from bullying and physical violence to more serious sexual and physical abuse, gang-related violence, and murder. <sup>(21)</sup>
Juvenile Offenders	68	Juvenile offenders refer to the antisocial and social disapproved behaviour of children under the age of 18 years. <sup>(22)</sup>
Delinquency	60	A person who has committed a criminal crime is known to be a delinquent. Delinquency includes a wide range of activities controlled by laws that differs by jurisdiction and is susceptible to changes in the law throughout time. <sup>(7)</sup>
Adolescents	59	Adolescence is the period of change from childhood to adulthood. Historically, this period ranges from 12 to 18 years, which corresponds approximately to the time between pubertal onset and guardian independence. <sup>(23)</sup>
Trauma	45	Trauma is defined as an affect response towards an adverse event, like accident, sexual assault, or natural disaster. Shock and disbelief are typical reactions to a devastating event. Long-term consequences may involve unexpected emotions, memories, difficult relationships, and physical problems like headaches or nausea. <sup>(24)</sup>
Child Welfare	44	Child welfare may be defined as the network of institutions, services, laws, and specialists that seek to protect the well-being, safety, and healthy development of children, particularly when families lack enough resources or competence to properly satisfy children's needs on their own. <sup>(25)</sup>
Recidivism	43	Recidivism is defined as the rearrest or reconviction of a former offender within a given time frame, often up to two years following release. <sup>(20)</sup> Recidivism may also be the repeat offender's second arrest and incarceration as part of a continuum of the first offence rather as a distinct, fresh occurrence. <sup>(26)</sup>
Youth	41	The United Nation determines youth as the time of change from childhood dependency to adulthood's independence and recognising interconnectedness as members of a community, and various regions define 'youth' as those aged between 15 to 24 years, without prejudice to other Member State definitions. <sup>(27)</sup>

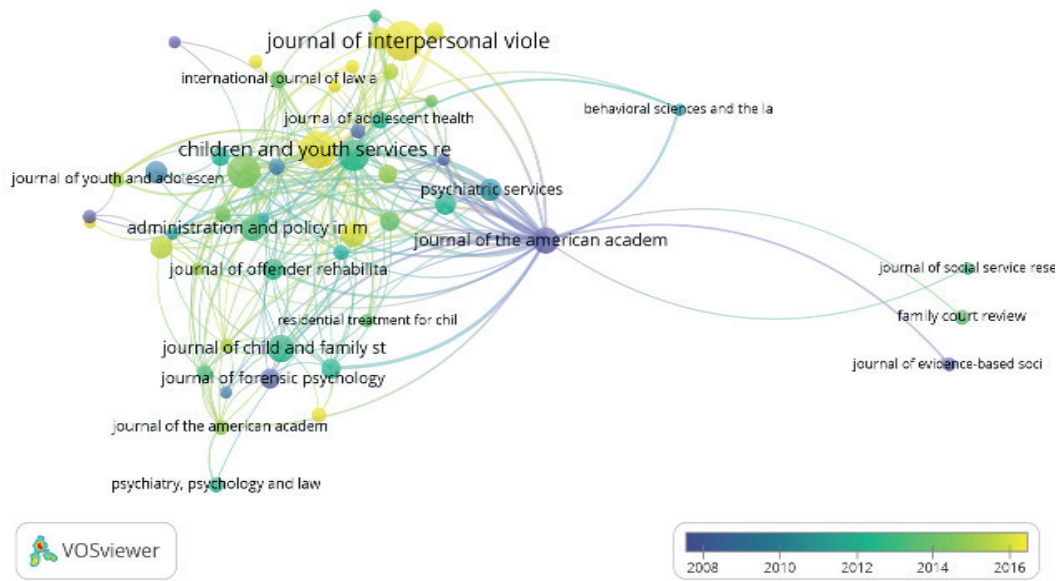
### RQ 7: Do different research papers influence each other?

Examining the citations of the various publications will aid in comprehending the associations that exists between various research articles and how each of these articles were impacted by other works of literature. Citation analysis was used to comprehend the relationship between different works. In Figure 6A, network visualization and overlay visualization of documents were conducted based on their citations. Only documents with a minimum of 5 citations were included, resulting in 734 documents out of the 2016 documents meeting the threshold. Thirty-five clusters were formed with 345 documents. Figure 6B looks into the collaboration of different cited works in terms of the journal in which the work was published. Keeping the minimum number of documents in a journal to be 5 out of 359 total, 52 met the threshold items, and 51 items were connected, forming 9 clusters.



6A

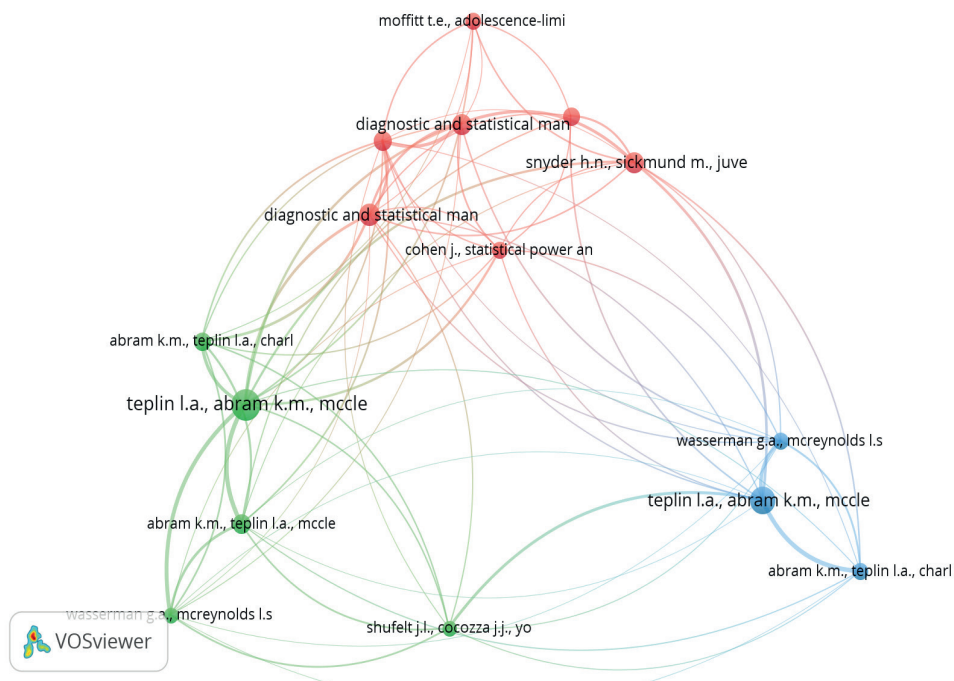




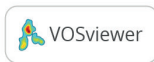
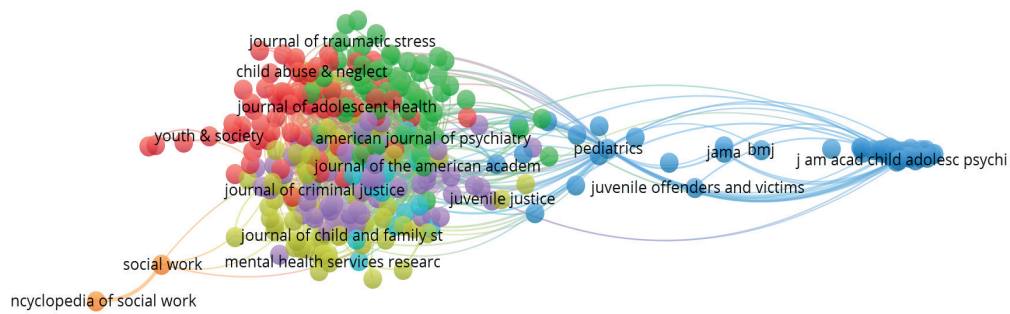
6B

Figure 6. A. Network visualization and overlay visualization of citations based on authors. B. Network visualization and overlay visualization of citations based on journals

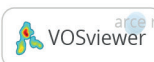
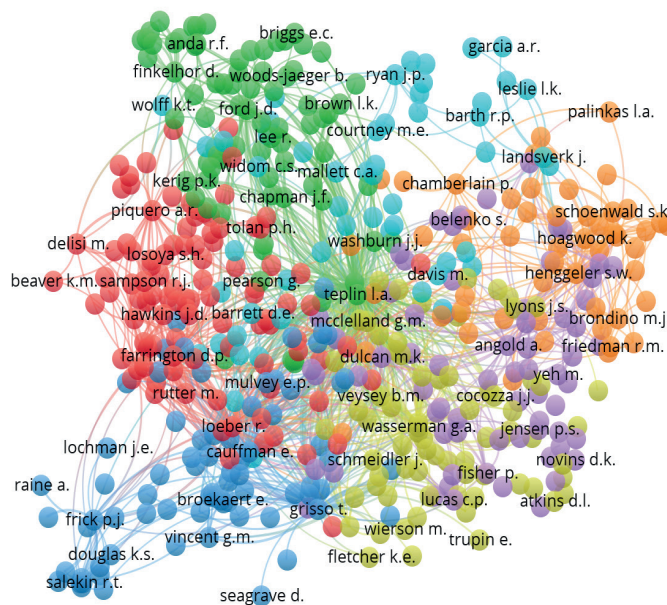
Co-citation analysis is a method used in bibliometrics and scientometrics to investigate the links between various academic works based on how frequently they are quoted by other documents. Figures 7A, 7B, and 7C examine the references, journals, and authors cited together in the documents. In figure 7A, references that were cited together with a minimum number of citations of the cited reference being 20, resulting in a threshold of 15 out of the 4554 references. Fifteen items are connected in three clusters. In figure 7B, out of the 13 739 sources, 300 were identified, which were divided into seven clusters. In figure 7C, out of the 3046 authors, 503 were identified, which were divided into seven clusters. This thereby states that this is an intellectually complex field that draws on a variety of disciplines and evolves over time under the influence of numerous theoretical lenses, research methodologies, and academic networks. Thus, Co-citation analyses assists to disentangle this complexity and determine the field's essential underpinnings and direction.



7A



7B



7C

Figure 7. Network visualization of Co-citation analysis

**DISCUSSION**

This bibliometric analysis provides insights into the evolution and structure of the research field related to juvenile crimes and psychological well-being. In terms of publications over the years, there was an increase followed by a decrease, with a peak of around 82 publications in 2022 and a fall in 2023. Regarding total publications and citations, the United States ranks first with 862 publications and 26 544 citations. It is followed by Australia and Canada in terms of total publications, and the Netherlands and Canada in terms of total citations. The major area of study is medicine, which accounts for 33 % with a total of 614 publications. The author Tolou Sham contributed significantly with 26 publications, and the University of South Florida was the major contributing organization with 36 publications. Prominent journals publishing literature on juvenile crimes and psychological well - being include the Journal of Interpersonal Violence, with 47 publications. The top ten highly cited studies suggested the need for a strategy to diagnose mental health issues in justice-involved youth. The keyword analysis helps understand the relationships between different keywords, with 13 clusters identified. The most commonly used term was “juvenile justice,” defined as the policies and procedures for individuals below the legal age who indulge in criminal behavior. The second most common keyword was “mental health,” followed by “youth violence,” “juvenile offenders,” “adolescence,” and “trauma.” These keywords provide an overall understanding of the nuance of juvenile crimes and psychological well-being. Citation analysis was used to examine the relationships between different papers and how each research

work contributed to others, with nine clusters identified. This analysis sheds light on the collaboration and interconnection between these clusters.

## CONCLUSIONS

The study gives an overall understanding on the various research as well as various aspects in which researchers have studied the topic of Juvenile crimes and psychological well-being. The research gap is evident from the number of publications as well as the areas in which the research has been looked into. Future research can work towards understanding the long-term trends as well as the effectiveness of interventions by conducting longitudinal studies for looking into the juvenile crimes and psychological well-being. Research done over extended period of time would give us more in-depth understanding about the area of study. The analysis of the present literature showcases that majority of the research is done in the area of medicine. Hence further interdisciplinary collaboration can be done in order to understand the complexity of the area under study. Collaborations can be done among researchers from fields such a psychology, Sociology, criminology and social work in order to have an overall understanding. Countries such as United States, Netherlands, Canada, United Kingdom, Australia, and many other countries are top contributors but there are many geographical boundaries that have understudied this topic. Thus, future studies can be order to understand the cultural and socio-economic factors of different understudied regions. Keyboard analysis shows the important keywords that are interconnected with each other with some of the keywords being Mental Health, youth violence, Juvenile Justice, trauma, Child welfare, Recidivism and youth. Future studies can further explore on these themes and determine their interconnections, as well as look into any emerging trends or topics that may not have received required attention

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### CONFLICT OF INTEREST

None.

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