

VICARIOUS TRAUMATISATION: BIBLIOMETRIC ODYSSEY OF TWO DECADES'

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ABSTRACT

Purpose: The research examines Vicarious Traumatization (VT) and the consequent emotional trauma experienced during Covid 19. Previous research has shown that VT has been research in relation to medical personnel. But COVID-19-related trauma has crossed the travails of trauma faced by Nurses, Therapists, and Mental health professionals and has permeated into the lives of "Homemakers", "Pharmacists", and "Pregnant Women". Therefore, a need was felt to examine the emerging dimension in VT to guide future research.

Design/Method: This paper uses bibliometric analysis to analyse research on vicarious traumatization before and after COVID-19. Bibliometric analysis aimed to identify top countries, journals, authors, and areas needing further exploration. The analysis is based on the Scopus and PubMed databases. The study has used the software of Bibliometric and VOSviewer.

Findings: The study has identified that VT has impacted not just the frontline warriors but has also impacted the mental well-being of the public at large. The study has identified a lack of theory focus in existing research and emphasises the importance of resilience-based approaches to study VT. The study aims to guide future research and interventions to support at-risk professionals and provides insights to inform future strategies for managing vicarious traumatization in professional settings.

Keywords: *Vicarious Traumatization, Resilience, COVID-19, Stress, Mental Health, Anxiety Levels, Empathy theory, attachment theory, social support theory, Bibliometric and VOSviewer®.*

INTRODUCTION:

This study aims to understand the changing landscape of research on Vicarious Traumatization (VT) wrought in by the COVID-19 pandemic. Vicarious traumatization is the emotional and psychological impact experienced by individuals indirectly exposed to traumatic events due to their work or personal relationships. A study of pre and post-COVID-19 era can help researchers examine how the pandemic has affected the prevalence and nature of vicarious traumatization. In the post-COVID era, around 3254 have been published between 2020 – 2022

alone, highlighting the reiteration of focus on VT in medical and non-medical areas. The present study aims to analyse the quantum of research done in VT using bibliometric analysis.

Bibliometric analysis can identify key trends and patterns in vicarious traumatization research, such as publication output, collaboration networks, and thematic focus. Understanding these trends can guide future research and inform interventions and support systems for professionals at risk of vicarious traumatization. The paper examines the literature on VT to identify gaps that require further exploration to develop evidence-based interventions, policies, and training programs to mitigate the impact of vicarious traumatization and enhance the well-being of those indirectly and inadvertently exposed to trauma. This study provides valuable insights into future trends in vicarious traumatization research considering the impact of the COVID-19 pandemic. It can build mental health support strategies, improve interventions, and contribute to the well-being of professionals vulnerable to vicarious traumatization. In the absence of such a study in the literature reviewed, the present study is significant in comprehending the latest trends and emerging theories in the field of VT.

REVIEW OF LITERATURE:

Trauma and Covid in Recent Times:

The World Health Organization (WHO) declared a global public health emergency in 2020 due to the emergence of the novel coronavirus (COVID-19) in China. The virus quickly spread to neighbouring countries, causing widespread alarm among people (World Health Organization, 2020; Xiong et al., 2020). Ever since the emergence of the COVID-19 pandemic in 2019, it has become apparent that a wide range of psychological symptoms have been affecting the general population, including those who are vulnerable. These symptoms may manifest as fear, anxiety, depression, stress, worry, anger, traumatic emotional experiences, and feelings of hopelessness (Ali et al., 2022; Trnka & Lorencova, 2020). The word "trauma" originates from the Greek term "traumatism," which signifies "a wound" and was initially used by German doctor Johannes Friedrich August von Esmarch within the medical domain to denote physical injuries. Gradually, traumatic events came to be acknowledged for their psychological and emotional effects, leading to the adoption of the term "psychological trauma". The term was first used to study its impact on soldiers of World War I called as "shell shock." One of the significant offshoots of the concept of trauma is Post-Traumatic Stress Disorder (PTSD), coined by psychiatrist Francis W. Hobart in 1980 to describe a collection of symptoms experienced by Vietnam War veterans. It was recognised as a particular mental health condition and was included in the Diagnostic and Statistical Manual of Mental Disorders (DSM) as early as 1980 (L. Clark & Gioro, 1998).

It is essential to understand that PTSD and somatic symptoms are often experienced by those who have survived trauma. However, research has shown that many factors can impact the severity of these symptoms and how they manifest in individuals, which are neither simple nor straightforward(21). They are further influenced by individual differences and contextual factors, which need to be focussed on when considering treatment options or strategies for coping with these symptoms. (Başoğlu, M et al., 1992; Horowitz et al., 1993; Ramsay et al., 1993).

Proposition 1: *These Individual differences in the impact and manifestation of trauma may become an exciting area of study; therefore, the present bibliometric analysis can be used to identify the research exploration of the same.*

Vicarious Trauma and Covid 19:

The COVID-19 pandemic has caused widespread turbulence across all aspects of society as there was fear of infection in all those who come into contact with COVID-19 patients. It has been reported that individuals who have been in contact with COVID-19 patients, such as healthcare workers and families of patients, experienced significantly higher levels of vicarious trauma (Mazza et al., 2020). VT during Covid 19 was more of “empathetic engagement” (McCann & Pearlman, 1990) experienced by family caregivers rather than professional therapists. The swift and widespread nature of COVID-19 transformed VT from an isolated incident to a commonly experienced phenomenon, roping all and sundry into its fold.

Proposition 2: *Thus, the impact of empathetic engagement as an offshoot of VT will be focused on in the present study.*

COVID-19 also highlighted the role of the family as the support giver for the elderly faced with morbidity and comorbidity issues. Studies have shown that people are more concerned about their loved ones, particularly family members, contracting COVID-19 than themselves (Barzilay et al., 2020). In addition to the coping strategies, social support, and positive parenting, which increased resilience during this pandemic, family cohesion correlated with overall well-being (Masten & Motti-Stefanidi, 2020), suggesting a strong leaning towards the social support theory defined by Sheldon Cohen, a professor of psychology at Carnegie Mellon University, in the 1980s. This theory suggests that individuals with low social support levels may be more vulnerable to vicarious trauma. Family as a support system played a vital role in reducing trauma created out of isolation, especially in the elderly during COVID-19, as individuals above 60 had to restrict their movements. In countries like India, which has “multi-generational living arrangements” (Bloom et al., 2010), the role played by the family in providing emotional support to COVID patients. Often, the family caregiver was seen to face VT due to their attachment to the patient, invoking the impact of attachment theory where the family members of an infected patient play an essential role in mitigating the trauma of the patient in the process the other members of the family often faced the secondary trauma caused either by the fear of self-affliction or fear for the family member(22). British psychologist John Bowlby posits Attachment Theory (Paterson & Moran, 1988) and says VT can be experienced by first responders, healthcare professionals, and family members of trauma victims, which can again differ based on the level of attachment. Many corporations used attachment-based family therapy (Levy et al., 2021) during COVID-19 to manage VT by involving the afflicted family members in counselling sessions and trauma management.

Proposition 3: *The extent of VT experienced needs to be linked with the level of attachment of the family member with the infected patient.*

THE RATIONALE OF THE STUDY:

The present study, therefore, attempts to understand these dimensions of VT using bibliometric analysis. Extensive research on vicarious traumatization has been conducted since conceptualisation in 1988. Nevertheless, the number of publications in this area has been relatively low, with only 4378 articles in 2020, 2021, and 2022. As a result, this study aims to

examine the evolution, development, and trends of vicarious traumatising before and after COVID-19 and to investigate its impact on the nature and trends of publications. To achieve this, the study analyses articles published from 1990 until now, categorising them as pre-COVID-19 and post-COVID-19 publications. This categorisation aims to determine whether there are any differences or changes, like publications concerning vicarious traumatising before and after COVID-19. Studies on vicarious traumatising have been conducted using qualitative and quantitative methodologies, focusing significantly on individuals working with trauma patients(17). The researcher has presented a chronological literature review of this construct in a tabular format, providing a comprehensive overview of all literature published in this area. Additionally, the author has conducted further data analysis by identifying the target audience, study type, and author's origin, among other factors(18).

RESEARCH METHODOLOGY:

Type of Research:

Bibliometrics is a research methodology that uses statistical methods to quantitatively measure the results of bibliographic research (Alan Pritchard, 2022). By applying statistical methods, we can obtain results that allow for qualitative analysis. This approach helps us understand the analysed domain's progress and identifies emerging scientific production trends (Donthu et al., 2021). Through this qualitative assessment, we can evaluate the contribution of scientific evidence in a particular conceptual area and identify potential areas for further research (Donthu et al., 2021; Dulla et al., 2021). The analysis process for this type of study follows four key steps: (1) defining the study objective, (2) selecting the appropriate analysis technique, (3) gathering data for analysis, and (4) conducting the bibliometric analysis. These guidelines ensure a structured and comprehensive approach to the study analysis and exposing its results.

Information sources and search strategy:

An exhaustive electronic search must be conducted on two Scopus and PubMed research databases. Our database searches were restricted to articles published in English and articles 1) Pre covid between 1990 to 2019 and 2) post-COVID between 2020 to 2022. Additionally, we used a specific set of disciplines and terms, with quotations around multi-word search terms and 'AND' between each discipline and term(23). The PubMed and Scopus databases used specific keywords and filters to search for relevant articles on vicarious trauma. Before Covid-19, the keywords included "vicarious traumatising," "vicarious posttraumatic," "vicarious trauma," and "VT," with filters for full text, human studies, English language, and publication dates from 1991-2019. After COVID-19, the exact keywords and filters were used, with publication dates from 2020-2022. In the Scopus and PubMed databases, the syntax for both periods involved using the keywords in the title, abstract, and keywords fields, with further limits for the English language and articles published during the specified time frames(26).

Research Strategy, Study Selection, and Data Extraction:

To ensure that no bibliometric studies have been undertaken on vicarious traumatising, a preliminary search was done on two reputable databases: Scopus and PubMed. This step was taken to ensure the accuracy and reliability of the research findings. The Scopus database's multidisciplinary feature enables researchers to search beyond their respective fields easily. PubMed is considered one of the most trustworthy Medical Science and Psychology databases.

Inclusion criteria:

The studies in the earlier database searches were examined for inclusion in this systematic review. Only those that met the following criteria were considered: 1) Include Pre and Post Covid vicarious traumatisations; 2) The article should be only in English; 3) The type of document selected are Articles; and 4) The criteria for the years range from 1990 to 2019 for the pre-COVID period and from 2020 to 2022 for the post-COVID period.

Exclusion Criteria:

We have deliberately excluded books, book chapters, book reviews, dissertations, and theses from our search to ensure accurate and relevant results. Furthermore, our quest is limited only to English language sources.

Statistical Analysis of the Data:

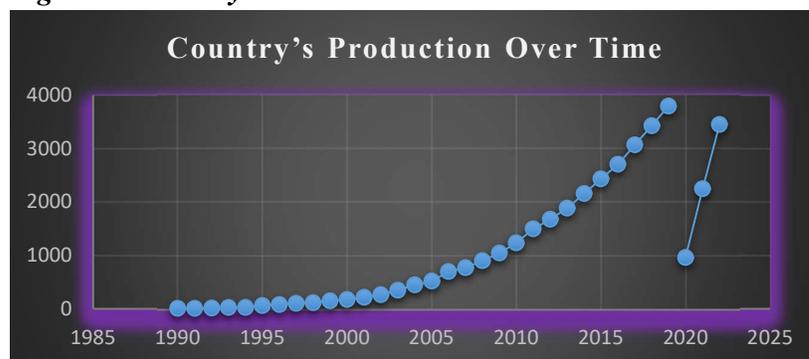
The process of statistical analysis was conducted alongside the extraction of bibliometric data, adhering to the latest guidelines. The process involved two main techniques - performance analysis to evaluate the contributions of research constituents and scientific mapping to analyse the intellectual interaction and structural links between constituents of the research. The data description is presented through visuals such as graphics, figures, and tables generated by analysis software like VOSviewer®, biblioshiny® (*bibliometrix*) and Microsoft Excel®.

RESULT:

The Trend in the Annual Evolution of Publications:

This Study has identified consistent publication growth over time after analysing a sample of 1847 articles published before Covid and 1407 articles published after Covid from 1990 to 2019 and 2020 to 2022, respectively. Figure 1 depicts the highest number of publications in the pre-Covid era in 2019 and the post-Covid era in 2022. Canada, China, Italy, United Kingdom, USA, Australia, Germany, Israel, Malaysia and Turkey Countries where research in VT has been undertaken.

Figure 1 - Country's Production Over Time



Source: Author self-created

Distributions of Articles by Journal and Area of Research:

In the list of 3254 articles, both Pre- and Post-Covid, Tables 2, 3, 4, and 5 showcase the top 10 Publication Titles with the highest impact factor. These publication titles are ranked from 0.23 to 2.42, according to Scimago Journal. There are articles from different quartiles. Before the Covid pandemic, Traumatology Journal had the most articles (70) in Scopus. However, in the post-Covid era, the International Journal of Environmental Research and Public Health had the highest number of publications (60). This study's three most focused research areas are Health and Trauma, Physiology, and Psychiatry.

Tables 2 & 3 – Top 10 Relevant Sources Pre – Covid***Table 2 - Scopus******Table 3 - PubMed***

Publication Title	Area	Articles	Publication Title	Area	Articles
Traumatology	Emergency Medicine	70	Journal Of Interpersonal Violence	Clinical Psychology	3
Clinical Social Work Journal	Health (Social Sciences)	32	International Journal of Environmental Research and Public Health	Health, Toxicology and Mutagenesis	2
Journal Of Traumatic Stress	Clinical Psychology	25	Psychological Trauma: Theory, Research, Practice and Policy	Clinical Psychology	2
Professional Psychology: Research and Practice	Psychology (Miscellaneous)	25	Frontiers In Public Health	Public Health, Environmental and Occupational	1
Psychological Trauma: Theory, Research, Practice, And Policy	Clinical Psychology	24	International Journal of Offender Therapy and Comparative Criminology	Arts and Humanities (Miscellaneous)	1
Children And Youth Services Review	Education	22	International Review of Psychiatry	Psychiatry and Mental Health	1
American Journal of Orthopsychiatry	Arts and Humanities (Miscellaneous)	20	Journal of Empirical Research on	Law	1

			Human Research Ethics: JERHRE		
Journal Of Loss and Trauma	Social Psychology	19	Journal of Evaluation in Clinical Practice	Health Policy	1
Psychotherapy	Clinical Psychology	17	Journal of Trauma & Dissociation	Clinical Psychology	1
Clinical Supervisor	Education	16	Medycyna Pracy	Medicine (Miscellaneous)	1

Source: Author self-created

Tables 4 & 5 – Top 10 Relevant Sources Post – Covid

Table 4 - Scopus

Table 5 -PubMed

Publication Title	Area	Articles	Publication Title	Area	Articles
International Journal of Environmental Research and Public Health	Health, Toxicology and Mutagenesis	60	Journal of Interpersonal Violence	Clinical Psychology	3
Frontiers in Psychology	Psychology (Miscellaneous)	51	American Journal of Psychotherapy	Clinical Psychology	2
Frontiers in Psychiatry	Psychiatry and Mental Health	40	Journal of Psychosocial Nursing and Mental Health Services	Nursing (Miscellaneous)	2
PLoS ONE	Multidisciplinary	24	Trauma, Violence & Abuse	Applied Psychology	2
Traumatology	Emergency Medicine	22	Academic Psychiatry	Education	1
Frontiers in Public Health	Public Health, Environmental and Occupational	19	Australasian Psychiatry	Psychiatry and Mental Health	1
Journal of Interpersonal Violence	Clinical Psychology	15	Behaviour Research and Therapy	Clinical Psychology	1

Healthcare (Switzerland)	Health Policy	13	Bulletin of the Menninger Clinic	Clinical Psychology	1
Psychological Trauma: Theory, Research, Practice, And Policy	Clinical Psychology	13	Clinical Psychology & Psychotherapy	Clinical Psychology	1
BMJ Open	Medicine (Miscellaneous)	12	Crisis	Psychiatry and Mental Health	1

Source: Author self-created

Author Profile:

Prior to the COVID-19 outbreak, a total of 1847 articles were published between 1990 and 2019. VT research remained the cornerstone of these articles, with the highest number of citations. McCann and Pearlman first defined the concept of VT in their inaugural article in 1990, and since then, VT has been further explored by Laurie Anne Pearlman and McCann, as depicted in Figures 2 and 4. From 2020 to 2022, 1407 articles were published. As shown in Figures 3 and 5, author Ho Roger received the highest number of citations during this period. The COVID-19 pandemic identified 679 clusters across the two research databases: Scopus (28) and PubMed (12). In the post-COVID-19 scenario, the number of clusters has reduced to 609 across the same four research databases: Scopus (175) and PubMed (5).

Figures 2 & 3: A Bibliometric Analysis of VT Authors

Figures 2A&B: Author Pre – Covid – 19

Fig 2 A - Scopus:

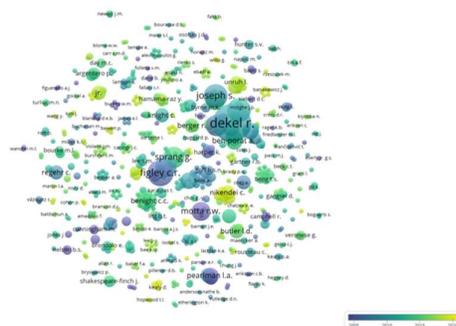
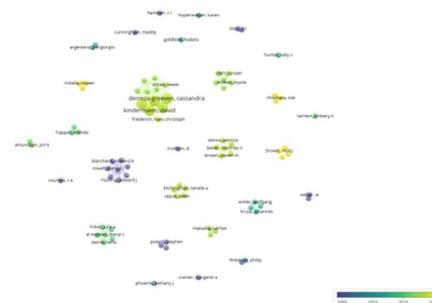


Fig 2 B - PubMed:



DISCUSSION:

The present research is a comprehensive bibliometric analysis examining global trends in research on VT. The analysis spanned from the first publication in 1990 until 2019, covering the pre-COVID era, and extended to the post-COVID era from 2020 to 2022. According to the analysis, publications have consistently risen before and after the COVID-19 pandemic, as observed through Scopus database. In PubMed, there has been a gradual increase in publications since 1995 but a decline in publications in 2020; this might be the natural impact of the onset of Covid 19 as publications are seen to surge from 2021(28). English is the most commonly used in the world, reflected in the research on vicarious traumatization. From a country point of view, the United States of America has made the most significant contributions to research on this subject, followed by Australia, Canada, Israel, the United Kingdom and Germany (Table 1)

The top ten journals with the highest publications before and after COVID-19 in Scopus and PubMed databases were analysed. Before COVID-19, *Traumatology*, *Clinical Social Work Journal*, and *Journal of Traumatic Stress* were among the top journals in Scopus. After COVID-19, the *International Journal of Environmental Research and Public Health*, *Frontiers in Psychology*, and *Frontiers in Psychiatry* were the top journals in Scopus. In the PubMed database, the *Journal of Interpersonal Violence* was the top journal before and after Covid-19. The pandemic has caused a shift towards publications on public health issues, healthcare, mental health services, trauma, and physiology.

Key Findings of the Bibliometric Analysis

1. The present study has also identified a dearth of theory focus in the studies undertaken. Most of the studies only focussed on Self Dependence theory, which explains the self-development theory to understanding the psychological impact of working with victims, essential to making these studies unidimensional.

The add-on contributions of the study are given below:

2. The study has identified gaps for future research in the areas like “Attachment-Based Family Therapy”, “Avoidance Behaviour (Hospital Avoidance)”, “Compassion Fatigue”, “Pregnancy Complication”, “Vicarious Resilience”, “Spirituality” and “Health Communication”, which can be explored in relation to vicarious traumatization. Future research in these dimensions can help practitioners in designing effective measures to enhance trauma-coping behaviour.
3. Vicarious traumatization during Covid 19 has emerged as an expansive area covering many factors hitherto untouched in the pre-Covid scenario. COVID-19-related trauma has crossed the travails of trauma faced by Nurses, Therapists, and Mental health professionals and has permeated into the lives of “Homemakers”, “Pharmacists”, and “Pregnant Women”. Studies can be undertaken about these incumbents and dimensions like “Compassion Fatigue”, “Vicarious Resilience”, and “Coping Behaviour Assessment”, “Spirituality”, which will make interesting contributions to the existing body of knowledge on VT. In other words, Covid 19 has made VT a household phenomenon. Studies in these directions will help the policymakers to be prepared for any such future medical disasters not only in terms of medical systems but also in psychological support for patients.

4. This study has identified the possibility of embedding theories like Empathy, attachment, and social support theories with the research on vicarious traumatization. Focus on VT and “empathetic engagement” also can emerge as a definitive study area for future research. Finally, the study makes vital contributions to enhancing the theory framework given the changing dimensions of trauma.

LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH:

This study analysed the impact of the COVID-19 pandemic on research about vicarious traumatization. The study identified certain limitations that need to be acknowledged. Firstly, relying solely on bibliometric analysis may only capture some relevant data and nuances of the research topic. Secondly, focusing only on English language publications may lead to language bias and exclude valuable research conducted in other languages. Lastly, the bibliometric analysis needs to assess the quality or impact of individual studies, potentially overlooking highly impactful research amid many publications.

After examining the findings, several areas require further research. Firstly, it is recommended to investigate individual differences in the impact and manifestation of trauma, considering personal characteristics, coping strategies, and contextual influences. Additionally, future research should focus on understanding the implications of empathetic engagement in developing and manifesting trauma symptoms(24). The study also emphasises the importance of the family as a support system in managing and mitigating trauma, particularly during the COVID-19 pandemic. Further research can delve into the specific role of the family in reducing trauma and enhancing resilience.

Moreover, the study identifies research gaps and areas that require further exploration, such as attachment-based family therapy, avoidance behaviour, compassion fatigue, pregnancy complications, vicarious resilience, coping behaviour assessment, and health communication(25). Researchers can focus on these areas to expand knowledge and understanding of vicarious traumatization and develop evidence-based interventions and strategies. In conclusion, this study provides valuable insights for future research directions. By addressing the suggested areas of further research, researchers can contribute to developing effective interventions, policies, and support systems to mitigate the impact of vicarious traumatization and promote the well-being of individuals indirectly exposed to trauma.

CONCLUSION:

It is clear from the comprehensive assessment of new vicarious traumatization dimensions after COVID-19 that the pandemic has significantly affected those exposed to trauma through others. According to the review, those who work in healthcare, those who are crucial to society, and those who have suffered indirect trauma, such as media exposure, are more likely to undergo vicarious traumatization. The analysis emphasises how the COVID-19 epidemic has produced exceptional circumstances that have exposed more people to indirect trauma. A considerable increase in media exposure to trauma has been related to vicarious traumatization due to the pandemic's global nature, high fatality rates, and the requirement for physical distance measures.

The review also highlights how vicarious traumatization can have a significant negative psychological impact and contribute to depression, anxiety, and post-traumatic stress disorder

(PTSD). The review also makes a case for the effectiveness of cognitive-behavioural and mindfulness-based interventions in lessening the harmful consequences of vicarious traumatization. The review's overall message emphasises the significance of identifying the new aspects of vicarious traumatization following COVID-19 and the necessary measures to indirectly help those who experience trauma.

Data Availability Statement: Raw data were generated in Scopus and PubMed. Derived data supporting the findings of this study are available from the corresponding author, Haritha B, on request.

Conflict of Interest: There are no relevant financial or non-financial competing interests to report.

Author Contributions: The corresponding author has accepted responsibility for the Conceptualization, Literature Review, Identifying the Research Gap, Methodology, Collecting the data, Performing the analysis, and Writing of the manuscript.

The second author has accepted responsibility for validating, reviewing, copy editing and overall advisory role for the manuscript and approving its submission.

Ethical considerations: Ethical clearance to conduct this study was obtained from the group research committee, SRM Institute of Science and Technology - Vadapalani campus.

Disclosure: The authors report no conflicts of interest in this work.

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