

Mental Health Challenges among First Responders in India: A Bibliometric Review

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Abstract

First responders in critical care are the trained professionals who offer help at the time of an emergency event, trauma, disaster, accident or injury. As they are working in a stress prone environment, it is critical to ensure adequate psychological aids to cope with mental health challenges among them. The objective of this bibliometric analysis is to explore, map and evaluate the scientific literature related to the mental health of first responders in India in the past twenty years. A total of 424 published articles were extracted from the Scopus database in relation to the proposed study. The extracted data was then analysed by employing the comprehensive bibliometric analysis techniques by using the statistical software "R- Studio," followed by VOS viewer software for mapping and visualization of results. Results revealed the annual growth of publications in the area, most contributing authors, institutions as well as journals. The results of the bibliometric analysis revealed the cumulative trend and nature of the scientific literature in the mental health domain of Indian first responders. The findings of this research can serve as a stepping stone for the future research endeavours related to the optimization of mental health and wellbeing of the first responder community not only in India but also around the globe.

Keywords: Bibliometric Analysis, First Responder, Mental Health, Psychological Morbidity.

Introduction

The population of first responders encompasses physicians and nurses in the critical care as well as emergency departments, fire-fighters, emergency rescue workers, , pain and palliative care workers etc.(1). As they are exposed to potentially traumatic events, risk of developing psychological morbidity and mental health challenges is very high among them (2,3). Studies conducted across various first responder populations have emphasized the higher prevalence of psychological morbidities such as post-traumatic stress disorder (PTSD), burnout, compassion fatigue, anxiety, depression, distress as well as suicidal ideation among frontline healthcare workers as well as emergency service workers in India (4-8). In the past 20 years, there has been a rising trend in the number of research being carried out with respect to the mental health of the first responders (9-11). Studies conducted among frontline healthcare professionals in a tertiary hospital in India showed a higher prevalence rate of depression (42%) (8) and stress level (40%) (12-15). It was revealed that Maintaining work life balance while working in a stress prone environment is very much

challenging especially for those who are employed in emergency departments, trauma care and firefighting (16,17). Cultural characteristics, resource limitations and stigma associated with mental health problems in India is also a critical concern. These societal factors along with the stigma associated with mental health hinder the mental health management among the professionals. Most of the professionals are struggling silently, without seeking professional mental health support (13). In addition, as compared to the developed countries, Indian first responders are facing unique socio-economic challenges, such as limited access to psychological healthcare associated with work setting, comparatively lower salaries, understaffed departments, and long working hours and continuous night shift etc. These factors exacerbate the physical and psychological struggle among the first responders (14). This research article tries to analyse and explore the literature about the mental health as well as psychological morbidity among the first

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responders in India by means of comprehensive bibliometric analysis. Bibliometric analysis is a scientific method of analysing and mapping the data or information from existing literature on a desired area of research (18). This research article will be discussing the publication trends and pattern, the research journals with remarkable impact in the area of focus, the articles that are extensively cited, contributions per organizations etc. The systematic mapping of available literature by employing the bibliometric analysis can provide a wider and comprehensive view of the scientific literature in the field and which may be useful for the researchers to know the trends and future scope (19). There are several studies in the global literature discussing the mental health of first responders. There is a limited number of studies so far explored in the Indian context. Hence there exists a critical need of conducting research which focuses on the mental health of Indian first responders to promote the wellbeing at work. This bibliometric review may help the researchers to analyse the existing research and to identify the critical areas that have to be explored further to get more insights.

Methodology

This section explains the systematic procedures as well as the methodology employed for executing the bibliometric analysis of the Indian research on psychological morbidity and mental health among first responders.

Data Source and Search Strategy

A comprehensive search has been carried out using the relevant keywords in the Scopus database. The time frame for the search was set from the year 2000 till 6 April 2024. Only the peer reviewed articles from the Scopus database are considered for this bibliometric review.

Research articles are considered for the analysis if they meet the following criteria (Inclusion Criteria);

- Published in a peer-reviewed Scopus indexed source or journal.
- Published in English language.
- Focus on the mental health of first responders working in India.
- Articles will be excluded if they (Exclusion Criteria);
- Are not published in the English language.
- Do not focus on first responder's mental health in the Indian context.

The search string used for the search in the Scopus database is as follows: TITLE-ABS-KEY (doctors OR nurses OR emergency OR nurse OR "emergency physician" OR "critical care nurse" OR "fire fighters" AND India AND anxiety OR stress OR depression OR PTSD OR burnout OR "Compassion Fatigue") AND PUBYEAR > 2000 AND PUBYEAR < 2024.

Data Selection

The initial search in the Scopus database has resulted in 810 studies. The obtained data set was then downloaded and saved. This data set was again screened by both the authors independently and refined the list of studies. Finally, after excluding a total of 386 studies which were irrelevant, a total of 424 studies were included for the analysis. Figure 1 shows the flow diagram of the selection of studies.

Data Analysis and Visualization

All the relevant bibliometric information such as, publication trends, citations analysis, author contribution, keyword analysis etc. were carried out using the software named "R-Studio" followed by "VOS viewer" software for mapping and visualization of results. R-studio is used for extensive data analysis. The bibliometric analysis is performed using the web package named "Biblioshiny" in R studio for the comprehensive mapping as well as scientometric analysis of literature (20). The Vosviewer application is used to analyse and map the citation as well as keyword discussed in the study (21).

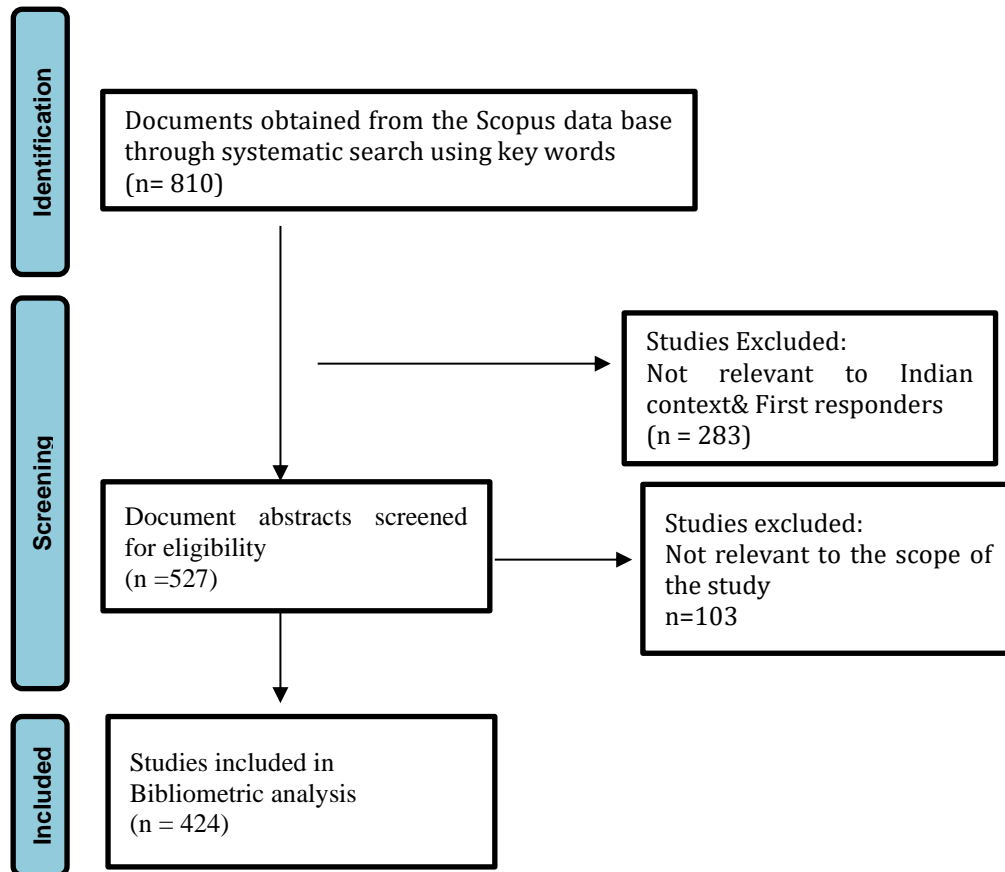


Figure 1: Flow Diagram of Selection and Inclusion of Studies in the Bibliometric Analysis

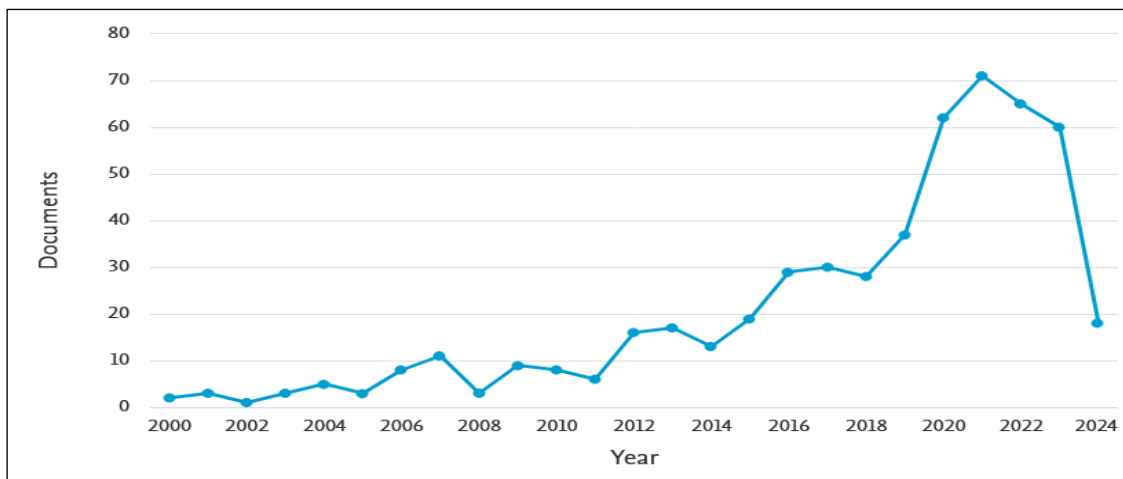


Figure 2: Graphical Representation of the Annual Scientific Production Over the Years Relating to The Mental Health and Psychological Morbidity of the First Responders

Results

Publication Trends

A systematic bibliometric analysis of scientific literature related to the mental health and psychological morbidity of Indian first responders showed a total of 424 documents published across

different sources. The documents mainly consisted of research articles (n=325). Followed by reviews (n=37), conference papers (n=15), letters (n=14), book chapters (n=12), editorial (n=9), notes (n=8) and short survey (n=4). The analysis of annual scientific production of the works in the area

shows a steep inclination from 2010 till 2024 as shown in Figure 2.

Most Relevant Journals

Analysis of the literature over the past twenty years revealed that “Asian journal of psychiatry” as the most prolific journal with regard to the publications in the proposed area of research(n=18). The other significant journals

include “Indian journal of critical care medicine” (n=16) followed by the “Indian journal of psychiatry”(n=15). The h-index as well as citations of documents published in the top journals in the area of mental health of first responders is given in Table 1. The graphical representation of the article count per year across the top prolific sources or journals are given in Figure 3.

Table 1: Most Relevant Sources

| Source | Documents | h Index | Total Citations |
|---|-----------|---------|-----------------|
| “Asian Journal of Psychiatry” | 18 | 9 | 224 |
| “Indian Journal of Critical Care Medicine” | 16 | 6 | 346 |
| “Indian Journal of Psychiatry” | 15 | 7 | 168 |
| “PLOS one” | 7 | 6 | 174 |
| “Journal of Health Management” | 7 | 5 | 87 |
| “National Medical Journal of India” | 7 | 4 | 71 |
| “Indian Journal of Occupational And Environmental Medicine” | 6 | 4 | 40 |
| “Indian Journal of Psychological Medicine” | 6 | 3 | 60 |
| “BMJ Open” | 5 | 3 | 86 |
| “Indian Journal of Community Medicine” | 4 | 4 | 39 |

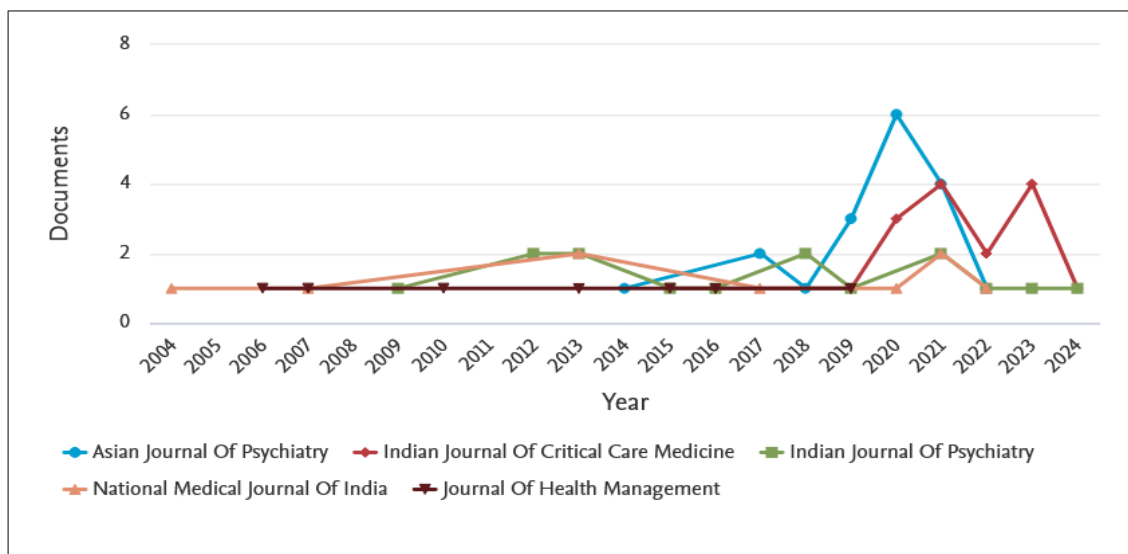


Figure 3: Documents Published by the Top Relevant Journals in the Area of Mental Health of First Responders

Most Cited Articles

The bibliometric analysis results of the most cited articles revealed that during and after the “covid - 19” pandemic, the mental wellbeing and psychological problems of the first responders were more discussed and studied. The most cited article “A multinational, multicentre study on the psychological outcomes and associated physical

symptoms amongst healthcare workers during COVID-19 outbreak” (22) was having 1091 citations followed by the article “Burnout among healthcare workers during COVID-19 pandemic in India: Results of a questionnaire-based survey” (23) with 175 citations. The articles with higher number of citations and its details are given in Table 2.

Table 2: The Most Cited Articles with Respect to the Mental Health of First Responders in India

| Paper | Journal | Total Citations | Title |
|------------------------|--|-----------------|---|
| Chew NW. 2020 (22) | Brain behavior and Immunity | 1091 | "A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak" |
| Khasne RW. 2020(23) | Indian journal of critical care medicine | 175 | "Burnout among healthcare workers during COVID-19 pandemic in India: Results of a questionnaire-based survey" |
| Suryavansi N. 2020(24) | Brain and behavior | 137 | "Mental health and quality of life among healthcare professionals during the COVID-19 pandemic in India. |
| Jose S. 2020(25) | Indian journal of critical care medicine | 95 | Burnout and resilience among frontline nurses during covid-19 pandemic: A cross-sectional study in the emergency department of a tertiary care centre, north India" |
| Grover S. 2018(26) | Indian Journal of Psychiatry | 74 | "Psychological problems and burnout among medical professionals of a tertiary care hospital of North India: A cross-sectional study" |
| Amin A .2015(27) | Indian Journal of Paediatrics | 45 | "Perceived Stress and Professional Quality of Life in Neonatal Intensive Care Unit Nurses in Gujarat, India" |
| Saini NK. 2010 (28) | Indian journal of critical care medicine | 42 | "Prevalence of stress among resident doctors working in Medical Colleges of Delhi". |

Most Productive Authors

Author production analysis revealed that Grover, S (N=6) leads the list followed by Avasthi A K (n=5), Kukreti, P, and Raghuveer, P. (n=5). Dhandapani, M

and Joseph, B were the other major contributors in the list (n=4). Top contributing author's name, number of documents citations as well as affiliations are depicted in Table 3.

Table 3: Top Contributing Authors

| Author | Documents | Citations | Affiliation |
|---------------|-----------|-----------|--|
| Grover S. | 6 | 187 | "Postgraduate Institute of Medical Education &Research, Chandigarh" |
| Avasthi AK. | 5 | 146 | "Postgraduate Institute of Medical Education &Research, Chandigarh" |
| Kukreti P. | 5 | 54 | "Lady Hardinge Medical College, Delhi" |
| Raghuveer P. | 5 | 56 | "National Institute of Mental Health and Neuro Sciences, Bengaluru, India" |
| Dhandapani M. | 4 | 114 | "Postgraduate Institute of Medical Education &Research, Chandigarh" |
| Joseph B. | 4 | 79 | "St. John's Medical College, Bengaluru, India" |

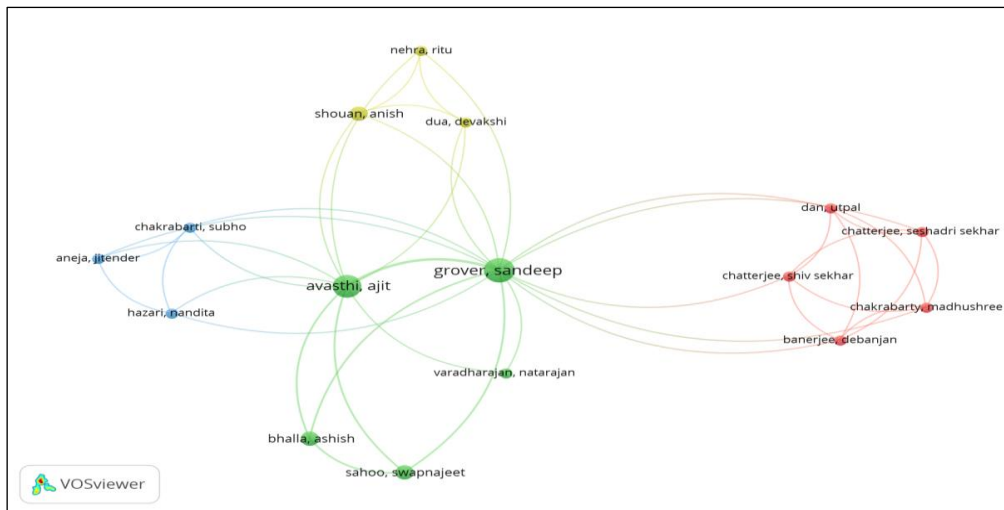


Figure 4: Showing the Association among the Top Authors Who has Published the Documents in The Area of Mental Health among First Responders in India

The bibliometric mapping was also done using the VOS viewer software, the association between the authors and their collaborations are obtained from this analysis. It is diagrammatically represented in Figure 4. There were mainly four clusters showing the collaborative connection between the authors. The Author named Grover, S followed by Avasthi, A dominated in the network with more number of associations.

Most Relevant Affiliations

This study also analysed the most relevant institutions based on the documents published under each institution. It was found that “All India

Institute of Medical Sciences”, New Delhi was leading the list (n=30) followed by “Postgraduate Institute of Medical Education & Research”, Chandigarh (n=28). While considering the citations, “Postgraduate Institute of Medical Education & Research” was dominant in the list with 463 citations followed by “National Institute of Mental Health and Neuro Sciences” having 306 cited articles in the area of mental health and psychological morbidity among the first responders in India. The relevant institutions, Number of documents as well as the citation count are provided in Table 4.

Table 4: Top Contributing Institutions

| Institution | Documents | Total Citations |
|--|-----------|-----------------|
| All India Institute of Medical Sciences, New Delhi | 30 | 203 |
| Postgraduate Institute of Medical Education & Research, Chandigarh | 28 | 463 |
| National Institute of Mental Health and Neuro Sciences | 23 | 301 |
| Manipal Academy of Higher Education | 12 | 52 |
| Christian Medical College, Vellore | 11 | 119 |
| King's College London | 10 | 89 |
| Kasturba Medical College, Manipal | 10 | 26 |
| Dr. Ram Manohar Lohia Hospital | 9 | 87 |
| UNSW Sydney | 9 | 89 |
| George Institute for Global Health | 9 | 140 |
| St. John's Medical College | 8 | 97 |

Analysis of the Key Words

Key words are the terms used in the research to encapsulate the main concepts, area and themes of the study. Analysing the key terms is beneficial to know and evaluate the trend as well as the research hotspots in a broad area of research. The

analysis of the key terms was executed in this study using the VOS viewer software and the diagrammatic representation of the output is given in Figure 5. It was found that the term “India” was the most relevant key word with most number of occurrences(n=322) followed by the term

scarcity, Irregular work shifts, insufficient resources for mental health support, and social stigma that prevents seeking professional assistance for mental health management, etc. These factors lead to elevated stress and trauma levels, along with the other stressors at work (14). The absence of adequate mental health support system is a crucial factor exacerbating the psychological issues faced by Indian first responders. First responders sometimes have to handle stressful circumstances and traumatic events without the help of professionals due to a lack of support networks, which may worsen mental health issues. To overcome these obstacles, a comprehensive effort must be made to improve the mental health care and encourage societal changes that support mental health treatment (33). This study's significance lies in its potential to analyse the knowledge gaps and to execute future research on adequate mental health interventions such as mindfulness-based interventions to optimize the mental health and to build resilience among the Indian first responders (34). Overall, this bibliometric research of the articles in the field of mental health and psychological morbidity among the Indian first responders is a significant source of reference for the future research.

Future Research Directions

Insights from this current study can be used as reference point for carrying out more research in the future as prioritizing mental health in the workplace is a significant concern today. Longitudinal studies that explore and evaluate the long-term effectiveness of different mental health interventions among the community of first responders should be done to understand and implement the psychological interventions to alleviate distress among first responders. Furthermore, in-depth qualitative researches are essential to delve into individual experiences and coping strategies against stressors at work. Finally, research should explore the potential benefits and scope of implementing technology driven mental support system through apps and online modalities to fill the gap of inadequate psychological support system among the first responder community.

Conclusion

Optimization of mental health is a significant concern among the population of first responders

who are predominantly exposed to stressful events and trauma. This systematic bibliometric analysis serves as a reference to the research hotspots in the domain of first responder's mental health and underscores the scopes and insights for further exploration and understanding of the factors impacting the mental well-being of first responders in India.

Abbreviation

PTSD: Post Traumatic Stress Disorder.

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Nil.

Author Contributions

Albin Joseph: Conceptualization, Methodology, Software, Investigation, Resources, Data curation, original draft preparation. Tony P Jose: Conceptualization, Supervision, Review.

Conflicts of Interest

The authors declared no potential conflicts of interest associated with this research.

Ethics Approval

Ethical approval is not required for this research as this research analyses existing literature without collecting new data or involving human subjects directly.

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