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Earthquake and Post-traumatic Growth: A Bibliometric Analysis

Deprem ve Travma Sonrası Büyüme: Bibliyometrik Analiz

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ARTICLE INFO	ABSTRACT
Keywords: Earthquake, Post-traumatic Growth, Trauma/Disaster Psychology, Bibliometric Analysis, Web of Science Article Classification: Research Article Date Received: 16.12.2025 Date Revised: 21.12.2025 Date Accepted: 29.12.2025	The objective of the present study is to elucidate the development process and research trends within the field by means of a bibliometric analysis of scientific studies on earthquake and posttraumatic growth. To this end, research articles published in the Web of Science database between 2000 and 2025 were examined. Following a thorough analysis of the available literature, a total of 297 research articles were identified and incorporated into the study. The findings indicate a substantial increase in the extant literature on earthquake and posttraumatic growth, with a notable predominance of studies within the disciplines of psychiatry and psychology. This proliferation of research has been particularly pronounced in recent years. A close examination of citations and authors reveals a concentration of research activity among a select group of researchers, with China being the leading country in terms of publications and citations. A review of keyword analyses indicates that posttraumatic growth is frequently discussed in conjunction with posttraumatic stress disorder, psychological resilience, and social support. However, recent years have seen an increase in interest in coping and process-oriented variables. Consequently, the study elucidates the theoretical and thematic process of the post-earthquake trauma and posttraumatic growth literature. The present study provides a systematic frame of reference for future research and intervention programmes.
MAKALE BİLGİSİ	ÖZET
Anahtar Kelimeler: Deprem, Travma Sonrası Büyüme, Travma/Afet Psikolojisi, Bibliyometrik Analiz, Web of Science Makale Kategorisi: Araştırma Makalesi Gönderilme Tarihi: 16.12.2025 Revizyon Tarihi: 21.12.2025	Çalışma, deprem ve travma sonrası büyüme konusundaki bilimsel çalışmaları bibliyometrik analiz yöntemiyle inceleyerek, alanın gelişim sürecini ve araştırma eğilimlerini ortaya koymayı amaçlamaktadır. Bu amaç doğrultusunda, Web of Science veri tabanında 2000–2025 yılları arasında yayımlanmış araştırma makaleleri taranmıştır. Analiz sonucu toplam 297 araştırma makalesinin olduğu bulunmuş ve bu çalışmalar analize dâhil edilmiştir. Bulgular, deprem ve travma sonrası büyüme literatürünün özellikle son yıllarda belirgin bir artış gösterdiğini ve çalışmaların ağırlıklı olarak psikiyatri ve psikoloji disiplinlerinde yoğunlaştığını göstermektedir. Atıf ve yazar analizleri, alanın belirli araştırmacılar etrafında kümелendiğini; ülke bazında ise Çin'in yayın ve atıf sayısı bakımından öne çıktığını ortaya koymuştur. Anahtar kelime analizleri, travma sonrası büyümenin çoğunlukla travma sonrası stres bozukluğu, psikolojik dayanıklılık ve sosyal destek kavramlarıyla birlikte ele alındığını; son yıllarda ise baş etme ve süreç odaklı değişkenlere yönelik ilginin arttığını ortaya koymuştur. Sonuç olarak çalışma,

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deprem sonrası travma ve travma sonrası büyüme literatürünün kuramsal ve tematik sürecini görünür kılmaktadır. Gelecekte yürütülecek araştırmalar ve müdahale programları için sistematik bir referans çerçevesi sunmaktadır.

1. Introduction

Disasters are defined as sudden and unexpected events that disrupt the established order of life. Disasters can be categorized as either human-induced (i.e. technological, industrial, or social) or natural events. Natural disasters are typically defined as events originating from natural events that have the potential to adversely affect human life, health, the environment and economic activities. Earthquakes, a natural disaster, are events that result in loss of life and property, environmental destruction and economic damage. Furthermore, they are also known to have significant effects on mental health. The unpredictability and suddenness of these events can result in a high traumatic impact potential. In this context, earthquakes are frequently regarded as traumatic stressors in psychological literature, with the potential to precipitate various mental health concerns, including posttraumatic stress disorder (PTSD), depression, anxiety, and grief reactions (Norris et al., 2002; Taşçı & Özsoy, 2021). Following the February 6, 2023 Kahramanmaraş earthquake, it has been noted that individuals who directly experienced the earthquake exhibited higher levels of mental health disorder symptoms compared to those who were indirectly exposed to the earthquake (Dündar & Kürdo, 2024). Another study found that after the February 6 earthquake, 24% of participants showed high levels of anxiety, 12.20% showed PTSD, and 5.5% showed high levels of depression (Demirbaş-Kurtoğlu, 2023).

However, it is also emphasized that traumatic stress reactions are not universal and that individuals may develop different ways of psychological adaptation to such events. Recent psychological studies have revealed that exposure to traumatic events can result in a range of psychological outcomes, including positive changes and negative consequences. The positive changes observed can be explained by the concept of posttraumatic growth (PTG) (Tedeschi & Calhoun, 2004). PTG is a theoretical construct that suggests that individuals can develop positive psychological changes in cognitive, emotional, and existential areas beyond returning to functioning after highly stressful life events (Tedeschi & Calhoun, 2004; Tedeschi et al., 2018). The concept of PTG is examined through the lens of five key dimensions: The aforementioned elements are delineated as follows: (a) strengthening in self-perception, (b) deepening in interpersonal relationships, (c) heightened awareness of the value of life, (d) the discovery of new possibilities, and (e) existential changes (Tedeschi & Calhoun, 2004).

For a considerable duration, the field of earthquake studies has been predominantly focused on psychopathological outcomes. A range of conditions, including PTSD, depression, sleep and anxiety disorders, have been the subject of frequent investigation. However, recent research has indicated an increase in the number of studies demonstrating that following large-scale traumas, such as earthquakes, individuals can become subjects who are not only damaged, but also psychologically transformed and empowered (Linley & Joseph, 2004). Research addressing the concept of post-earthquake PTSD reveals significant relationships with PTSD, as indicated by variables such as social support, coping strategies, religious beliefs, interpretive processes and personality traits (Prati & Pietrantonio, 2009). Nevertheless, the role of cultural context in the development of PTSD is becoming increasingly significant. It is emphasized that social ties and community solidarity can act as a supportive factor for growth, especially in collectivist cultures.

Although the earthquake and PTS literature is expanding quantitatively, there are limited studies that holistically reveal the structural characteristics of this literature, its development over time, pioneering authors, influential journals, cross-country collaborations, and thematic trends. Bibliometric analysis offers a powerful methodology for examining the quantitative and

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structural characteristics of scholarly production in a particular research area, making the dynamics of the field's development visible (Aria & Cuccurullo, 2017). Bibliometric studies in which earthquake and posttraumatic growth issues are addressed together both reveal the intersections of mental health literature with disaster psychology and provide a guiding framework for future research. Especially today, when the frequency and severity of disasters are increasing on a global scale, systematic mapping of scientific production in this field has become an important requirement.

The aim of this study is to present an overview of the extant literature by conducting a bibliometric analysis of scientific publications on earthquake and posttraumatic growth. In order to this end, the distribution of publications by year, the most prolific authors and institutions, prominent journals, citation patterns, keyword networks and thematic trends will be examined in detail.

It is anticipated that this study will provide researchers operating within the domain of post-earthquake mental health with a comprehensive literature map. This will serve to both illuminate the strengths and limitations of the extant body of knowledge and to delineate a strategic direction for future studies. Furthermore, the study aspires to make a distinctive contribution to the domains of psychology, psychiatry and disaster studies by addressing the development of posttraumatic growth literature in the context of disaster from a holistic perspective.

2. Methodology

The present study has been formulated as a descriptive and exploratory research study, the methodology of which is based on bibliometric analysis. Bibliometric analysis is a systematic method that aims to reveal the intellectual structure, development dynamics and research trends of a field by examining the quantitative characteristics of publications in a particular scientific domain (Donthu et al., 2021).

The research data were obtained from the Web of Science Core Collection (WoS) database. WoS is a highly regarded database for bibliometric studies, incorporating peer-reviewed and methodologically qualified journals with high impact factors (Mongeon & Paul-Hus, 2016). A further rationale for opting for WoS is that it furnishes exhaustive bibliographic information (citation counts, author information, institutions, countries, keywords, and reference lists), thereby facilitating reliable citation analysis and network analysis.

The present literature review was conducted in the WoS Core Collection database, covering the period between 2000 and 2025. The primary rationale for selecting this time period pertains to the emergence of the posttraumatic growth concept as a rapidly evolving and theoretically sophisticated research domain since the 2000s (Tedeschi et al., 2018). In the search process, the following keywords were used: “(("posttraumatic growth" OR "post-traumatic growth" OR "post traumatic growth" OR "PTG") AND ("earthquake" OR "post-earthquake" OR "seismic event" OR "seismic disaster"))”.

The study exclusively incorporated research articles and studies that had been published in peer-reviewed journals. From the analysis, book chapters, proceedings, editorials and reviews were excluded. This choice was made to ensure methodological consistency in bibliometric analyses and to evaluate citation patterns more reliably (Donthu et al., 2021). Bibliometric analyses were conducted using VOSviewer software. VOSviewer is a widely used analysis tool in the literature that allows visualization of bibliometric networks (van Eck & Waltman, 2022).

Since this study was conducted using publicly available and secondary data, it does not require ethics committee approval. No individual data was used in the analysis process, and the research was conducted in accordance with ethical principles.

3. Results

As a result of the review, 297 research articles were found. 288 of the studies are in English and 6 of them are in Spanish. The other studies were in Chinese, Italian and Portuguese. When the distribution of research fields is analyzed, it is seen that the studies are mostly in the fields of “Psychiatry” (n=110), “Psychology Multidisciplinary” (n=62) and “Psychology Clinical” (n=56). When the distribution of the studies by years is analyzed, it is seen that the number of studies has increased over the years, especially since 2012, although there are fluctuations between years. The distribution of studies by years is given in Figure 1.

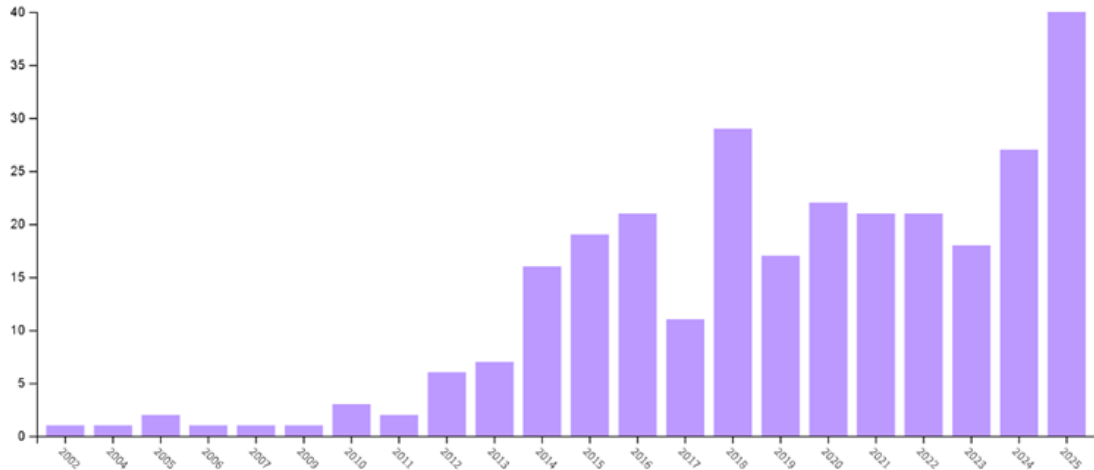


Figure 1. Distribution of Research Numbers by Years

It is seen that Xinchun Wu is at the center of 297 studies. The author has 4 studies and 179 citations of these studies. The authors with the most research articles on the related topic are shown in Figure 2. Yuchang Jin, the most cited author, has published 2 articles and these studies have 187 citations in total. The image of the most cited authors is given in Figure 3.

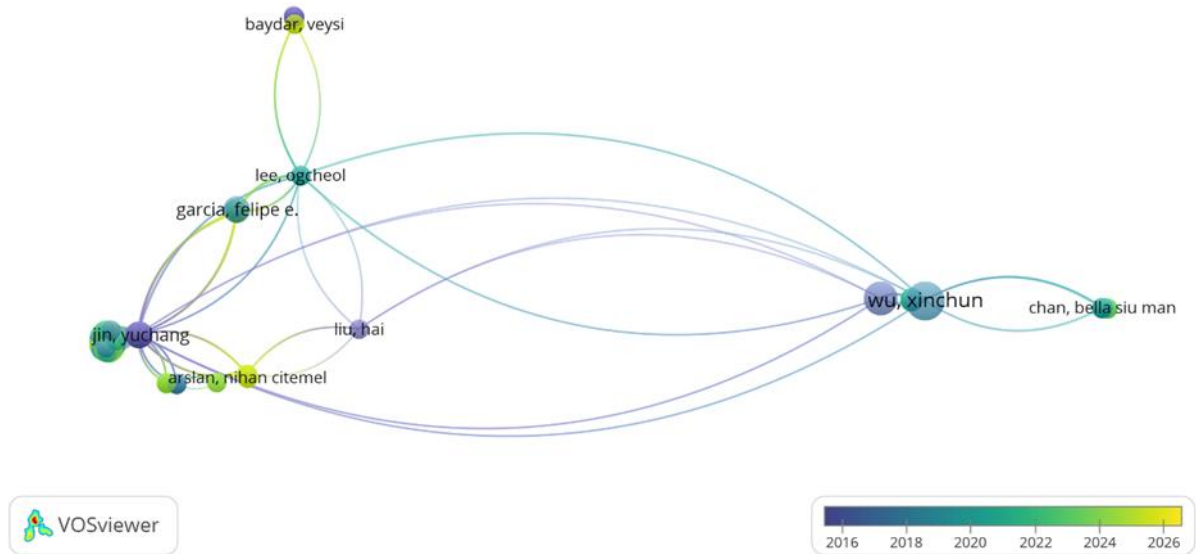


Figure 2. Authors with the Most Research Papers in the Wos Database

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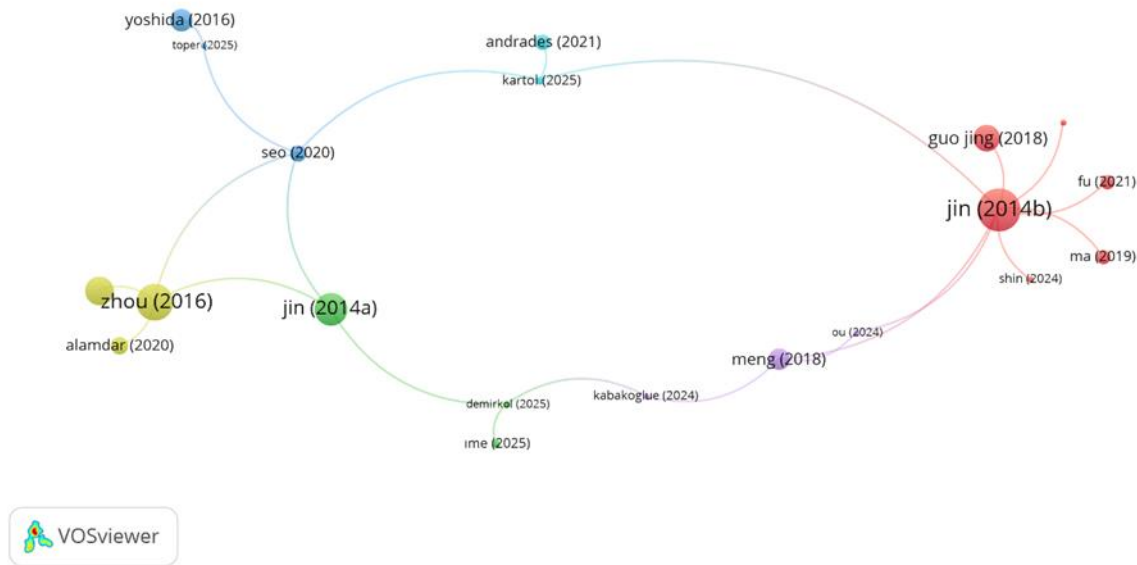


Figure 3. Distribution of Research Numbers by Years

When the distribution of studies according to countries was analyzed, it was seen that China had the highest number of publications. A total of 23 studies were conducted in China and 673 citations were made to these studies. Türkiye ranked second with 10 studies and 21 citations and USA ranked third with 9 studies and 217 citations (Figure 4).



Figure 4. Countries with the Highest Number of Research Articles on “Earthquake and Post-traumatic Growth”

The keywords in the studies between 2000 and 2025 were analyzed (Figure 5). When the content and variables related to “earthquake and post-traumatic growth” are examined, it is seen that the concepts of “post-traumatic stress disorder”, ‘resilience’, “social support”, “self-compassion” are frequently used. It is seen that the concepts of “coping” and “post-traumatic stress” have started to take place more in the studies conducted in the later years, and therefore the concepts of ‘coping’ and “post-traumatic stress” are more current in the studies on “Earthquake and post-traumatic growth” (Figure 6).

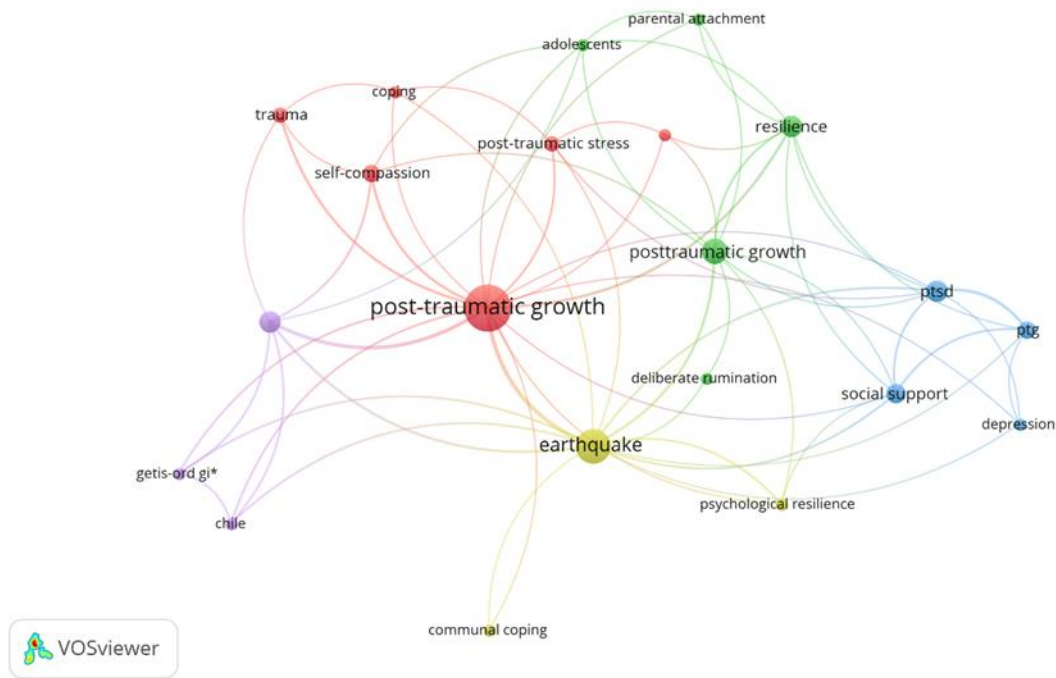


Figure 5. Most Common Keywords Used in Studies

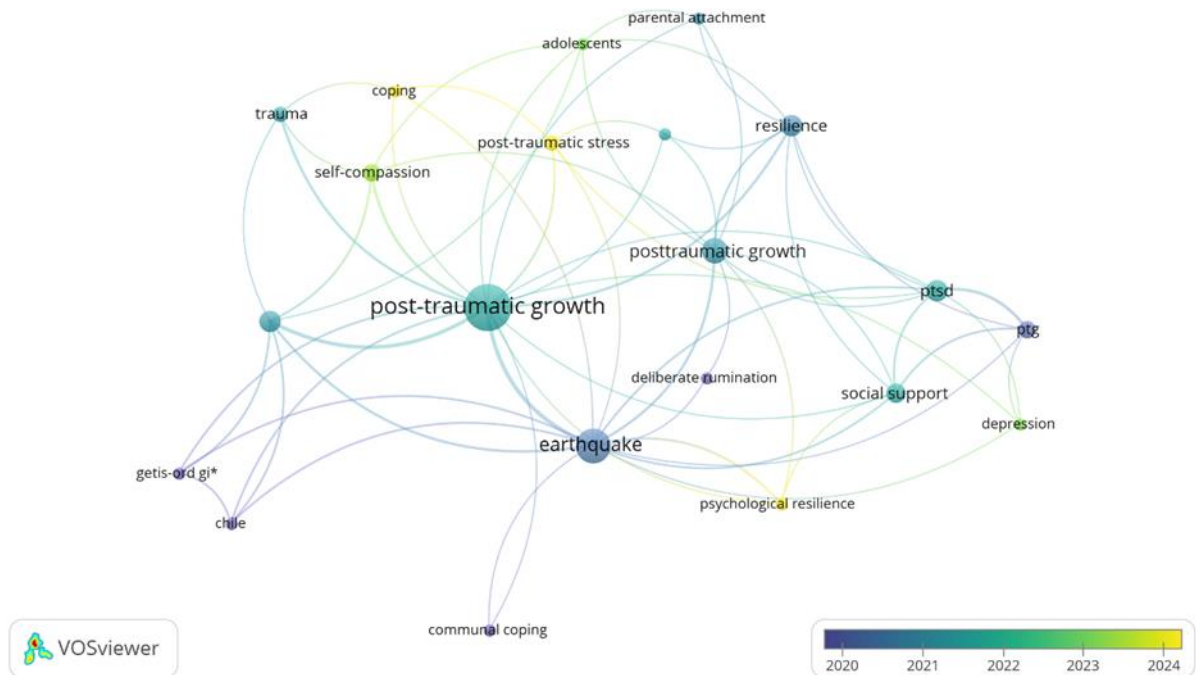


Figure 6. Distribution of the Most Common Keywords Used in Studies by Years

4. Discussion

The present study provides a comprehensive framework of the structural features of the field by presenting the quantitative and thematic development of research on PTG in the earthquake context between 2000 and 2025. The findings demonstrate that the extant literature pertaining to post-earthquake trauma and growth has exhibited a marked upward trend over time, with a concomitant expansion in the scope of the literature to encompass more complex psychological processes, a development that has been particularly pronounced in recent years. This increase

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is consistent with major earthquakes on a global scale, increased awareness of the long-term effects of disasters on mental health, and the growing adoption of the posttraumatic growth approach in the fields of clinical psychology and disaster psychology (Tedeschi et al., 2018; Bonanno et al., 2010). When the distribution of research areas is analyzed, it is seen that the studies are mainly concentrated in psychiatry and psychology disciplines. This finding suggests that post-earthquake traumatic experiences are not only addressed as a social or environmental problem, but also in the context of clinical symptoms, adaptation processes and psychological health. The concentration in the field of psychiatry in particular suggests that the complex relationship between posttraumatic stress disorder (PTSD) symptoms and posttraumatic growth is still a central research topic (Shakespeare-Finch & Lurie-Beck, 2014). This supports theoretical approaches that PTSD is a multidimensional process that needs to be addressed together with psychopathology, rather than an opposite outcome. Author and citation analyses reveal that the field is clustered around certain researchers. The fact that researchers such as Xinchun Wu and Yuchang Jin are highly cited with relatively few studies indicates that these authors have produced studies with high theoretical depth and methodological robustness. The findings of the distribution by country reveal that China is clearly ahead in terms of the number of publications and citations. This may be explained by the longitudinal and large-sample studies conducted after the recent large-scale earthquakes in China. The high citation rate of China-based studies suggests that these studies constitute a reference point not only for local but also for global trauma literature. The fact that Türkiye ranks second in terms of the number of publications is in line with the country's high earthquake risk and the increasing academic interest in recent years. However, the relatively low number of citations indicates that the international visibility of Türkiye-based studies should be increased. Keyword analysis demonstrates that the theoretical focus of earthquake and post-traumatic growth studies has changed over time. The frequent use of the terms “post-traumatic stress disorder”, ‘resilience’ and “social support” reveals that PTSD is still largely addressed within the framework of stress symptoms and protective factors. On the other hand, the fact that the concepts of “coping” and “post-traumatic stress” have become more prominent in recent years indicates that there is an increasing tendency towards process-oriented and dynamic models in the literature. It is evident from the extant literature that the field of research concerning the psychological consequences of seismic events and the subsequent positive developments in the affected individuals is evolving towards a more comprehensive, multifaceted and theoretically sophisticated paradigm. The contemporary state of the field indicates that models that address psychological processes, social context and traumatic stress symptoms in unison are becoming increasingly prominent, and that the tendency towards interdisciplinary approaches will increase in the future.

5. Conclusion

The findings show clearly that the field has gained a significant momentum especially in recent years; posttraumatic growth has started to be addressed as a multidimensional structure that integrates psychological resilience, coping processes and social context, going beyond psychopathology-oriented approaches. The concentration of studies mainly in psychiatry and psychology disciplines reveals that clinical symptoms and positive psychological changes are addressed together in post-earthquake mental health research. In addition, publication and citation patterns concentrated around specific countries and researchers indicate that the theoretical development of the field has been shaped through a limited number of pioneering studies. Keyword analyses reveal a growing interest in coping and process-oriented concepts in addition to stress symptoms and emphasize the dynamic nature of posttraumatic growth. In these ways, the study provides a holistic framework of the current state of the post-earthquake trauma and growth literature.

In accordance with the findings of this bibliometric analysis, a number of recommendations can be put forward for future research. Firstly, it is imperative to extend the scope of research by incorporating cross-cultural and comparative designs into studies that focus on specific geographical regions and research groups. In particular, studies to be conducted in countries with high earthquake risk but which are relatively underrepresented in the extant literature will contribute to a better understanding of the contextual and cultural determinants of posttraumatic growth (Tedeschi et al., 2018). Secondly, it is recommended that variables such as coping, cognitive processes, and meaning-making, which have been prominent in keyword analyses in recent years, be examined in more depth through longitudinal and mixed-method studies. Research is required to reveal the development of posttraumatic growth over time and its interaction with stress symptoms, in order to test and develop theoretical models (Shakespeare-Finch & Lurie-Beck, 2014). Finally, for the purpose of practical application, it is recommended that components that support posttraumatic growth be addressed more systematically in post-earthquake mental health interventions.

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Disclosure Statements

1. The authors of this article confirm that their work complies with the principles of research and publication ethics.
2. No potential conflict of interest was reported by the authors.
3. This article was screened for potential plagiarism using a plagiarism screening program.