

Research Patterns of Suicide Prevention Based on Sustainable Social Development

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Abstrak

Pencegahan bunuh diri merupakan isu kesehatan mental global yang memiliki keterkaitan erat dengan pembangunan sosial berkelanjutan. Meningkatnya perhatian terhadap isu ini mendorong pertumbuhan publikasi ilmiah lintas disiplin, namun sekaligus berpotensi menimbulkan fragmentasi pengetahuan. Penelitian ini bertujuan untuk memetakan perkembangan penelitian mengenai pencegahan ide bunuh diri dalam perspektif pembangunan sosial berkelanjutan melalui analisis bibliometrik. Data diperoleh dari basis data Scopus menggunakan kata kunci yang berkaitan dengan ide bunuh diri, pencegahan bunuh diri, komunitas, pembangunan sosial, dan pembangunan berkelanjutan. Sebanyak 4.424 artikel jurnal berbahasa Inggris yang diterbitkan pada periode 1958–2025 dianalisis menggunakan perangkat lunak VOSviewer. Analisis bibliometrik dilakukan untuk mengidentifikasi tren publikasi, kontribusi negara, serta produktivitas penulis. Hasil penelitian menunjukkan bahwa publikasi terkait pencegahan bunuh diri berbasis pembangunan sosial berkelanjutan mengalami peningkatan signifikan sejak pertengahan 1990-an, dengan puncak publikasi pada tahun 2024 dan 2025. Amerika Serikat menjadi negara dengan kontribusi publikasi dan sitasi terbesar, diikuti oleh Australia, Kanada, dan Inggris. Selain itu, hasil analisis penulis menunjukkan adanya sejumlah peneliti yang menempati posisi sentral dalam jaringan kolaborasi ilmiah dan berperan penting dalam pengembangan kajian pencegahan bunuh diri. Temuan ini menegaskan bahwa pencegahan ide bunuh diri semakin diposisikan sebagai bagian integral dari agenda pembangunan sosial berkelanjutan dan memerlukan kolaborasi penelitian global yang lebih inklusif.

Kata Kunci: *pencegahan bunuh diri, pembangunan sosial berkelanjutan, analisis bibliometrik*

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Abstract

Suicide prevention was a global mental health issue that was closely related to sustainable social development. The increasing attention to this issue encouraged the growth of interdisciplinary scientific publications, but it also led to potential fragmentation of knowledge. This study aimed to map the development of research on suicide ideation prevention within the perspective of sustainable social development using bibliometric analysis. Data were obtained from the Scopus database using keywords related to suicidal ideation, suicide prevention, community, social development, and sustainable development. A total of 4,424 English-language journal articles published between 1958 and 2025 were analyzed using VOSviewer software. Bibliometric analysis was conducted to identify publication trends, country contributions, and author productivity. The results showed that publications on suicide prevention within the context of sustainable social development increased significantly since the mid-1990s, with publication peaks occurring in 2024 and 2025. The United States became the largest contributor in terms of publications and citations, followed by Australia, Canada, and the United Kingdom. In addition, the author analysis revealed several researchers who occupied central positions in scientific collaboration networks and played important roles in advancing suicide prevention research. These findings confirmed that suicide ideation prevention was increasingly positioned as an integral part of the sustainable social development agenda and required more inclusive global research collaboration.

Keywords: *suicide prevention, sustainable social development, bibliometric analysis*



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INTRODUCTION

Suicide is a significant public health problem, with more than 700,000 deaths each year (OECD/WHO, 2022). Suicide case data have become a major concern in the context of sustainable social development. This situation was further exacerbated by the global pandemic that began in 2019. During the COVID-19 period, the global prevalence of suicidal ideation was 13.5%, suicide attempts 10.4%, and mortality 0.5%, corresponding to approximately 4.52 deaths per 100,000 person-years (Khazaei et al., 2019). These findings highlight the substantial impact of the pandemic on mental health and the urgent need for targeted interventions to address the increasing risk of suicidal behavior in the general population worldwide. This paradoxical trend underscores the need to strengthen suicide prevention efforts, particularly in low- and middle-income countries.

The Sustainable Development Goals (SDGs) represent a development paradigm that ensures continuous improvement in community economic welfare, maintains the sustainability of social life, preserves environmental quality, and guarantees justice and good governance in order to sustain improvements in quality of life from one generation to the next (Rudiyanto, 2020).

The prevention of suicidal ideation is essential for sustainable social development and is closely aligned with the Sustainable Development Goals (SDGs), particularly Goal 3, which emphasizes health and well-being (Junior & Etges, 2023). Target 3.4 of the SDGs aims to reduce premature mortality from non-communicable diseases, including mental health problems, by 2030 (OECD/WHO, 2022). Addressing mental health issues, including suicide prevention, is therefore critical for fostering resilient communities and achieving broader social objectives. Early detection of suicidal ideation can serve as an initial and strategic step in prevention efforts (Nurjanah et al., 2025). In other words, the prevention of suicidal ideation aims to ensure overall societal well-being and stability (Valle-Palomino et al., 2023).

Suicide prevention is a multidisciplinary issue involving mental health, psychology, sociology, public policy, and social development. It is a global public health priority closely linked to the Sustainable Development Goals (Pollock et al., 2020). Over recent decades, the number of scientific publications addressing suicidal ideation and its prevention has increased substantially, reflecting growing global attention to mental health and sustainable development. However, the rapid expansion of this body of literature may also lead to knowledge fragmentation, as research findings are dispersed across different disciplines, geographical contexts, and methodological approaches.

Mapping scientific knowledge is therefore essential to provide a comprehensive overview of the structure, development, and direction of research on the prevention of suicidal ideation. Such mapping enables the identification of publication trends, dominant research themes, key scientific actors, and patterns of collaboration among researchers and institutions. Furthermore, knowledge mapping facilitates the identification of research gaps, particularly with regard to the integration of suicidal ideation prevention within the framework of sustainable social development. Consequently, scientific knowledge mapping serves as a strategic foundation for guiding future research, strengthening interdisciplinary synergy, and supporting evidence-based policymaking (Eck & Waltman, 2016).

Bibliometric methods are employed because they provide quantitative and objective analyses of large bodies of scientific literature. Bibliometric analysis enables systematic mapping of publication performance and relationships among knowledge units, such as authors, journals, institutions, and countries (De Jong & Bus, 2023). The use of bibliometric approaches is also consistent with the goals of sustainable social development, as it can demonstrate the extent to which suicide ideation prevention has been integrated into global mental health and development discourses. Therefore, this method is considered appropriate for generating a comprehensive, objective, and data-driven knowledge map to support the development of sustainable prevention policies and practices.

METHODS

This study employed a bibliometric analysis. The VOSviewer software was used to analyze the data and to facilitate the selection and visualization of publications related to suicidal ideation prevention. Publications indexed in the Scopus database were retrieved using the following search query: TITLE-ABS-KEY ("suicidal ideation" OR "suicide prevention" AND "community" OR "social development" OR "sustainable development")

VOSviewer was used to construct, visualize, and explore bibliometric maps (De Jong & Bus, 2023; van Eck & Waltman, 2010). The bibliometric analysis procedures in this study consisted of the following stages: defining the search keywords, obtaining the initial search results, refining the search results, compiling descriptive statistics of the retrieved data, and conducting bibliometric analyses.

The keyword search using "suicidal ideation" OR "suicide prevention" AND "community" OR "social development" OR "sustainable development" was conducted on 30 December 2025. The initial search yielded 5,616 documents in various publication formats, with records dating back to 1958, which marks the beginning of scientific research on this topic. The results of the initial search are presented in Table 1.

Table 1. First Publication on Suicidal Ideation Prevention Research

Author	Title	Source	Year
Motto, J.A., Greene, C.	<i>Suicide and the Medical Community</i>	<i>Archives of Neurology and Psychiatry, 80(6), pp. 776–781</i>	1958
Litman, R.E., Farberow, N.L.	<i>Suicide prevention in hospitals</i>	<i>Zeitschrift Fur Preventivmedizin Revue De Medecine Preventive, 10(1), pp. 488–498</i>	1965

(Source: Scopus data)

After obtaining the initial results, the search results were refined by screening and selecting articles that matched the predefined inclusion criteria and were relevant to the objectives of the study. The final dataset consisted of 4,424 documents, which were subsequently analyzed to address the following research questions:

RQ1: What are the publication trends in research on suicidal ideation prevention based on sustainable social development over time?

RQ2: Which countries contribute most actively to publications on suicidal ideation prevention based on sustainable social development?

RQ3: Which authors have published the most research on suicidal ideation prevention based on sustainable social development?

The final dataset was exported in CSV format and analyzed using the VOSviewer software. The search was conducted using the following query:

TITLE-ABS-KEY ("suicidal ideation" OR "suicide prevention" AND "community" OR "social development" OR "sustainable development") AND PUBYEAR > 1957 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (LANGUAGE, "English"))

RESULTS AND DISCUSSION

What are the publication trends in research on suicidal ideation prevention based on sustainable social development over time?

Research publications on suicidal ideation prevention based on sustainable social development began to emerge in 1958. From 1959 to 1964, no publications related to this topic were identified. Between 1965 and 1993, the number of publications remained very limited, with fewer than ten documents published per year. Since 1994, the volume of research has shown a steady and continuous increase each year. The highest number of publications was recorded in 2024 and 2025, with 432 publications in each year. The publication trend on suicidal ideation prevention based on sustainable social development is presented in Figure 1.

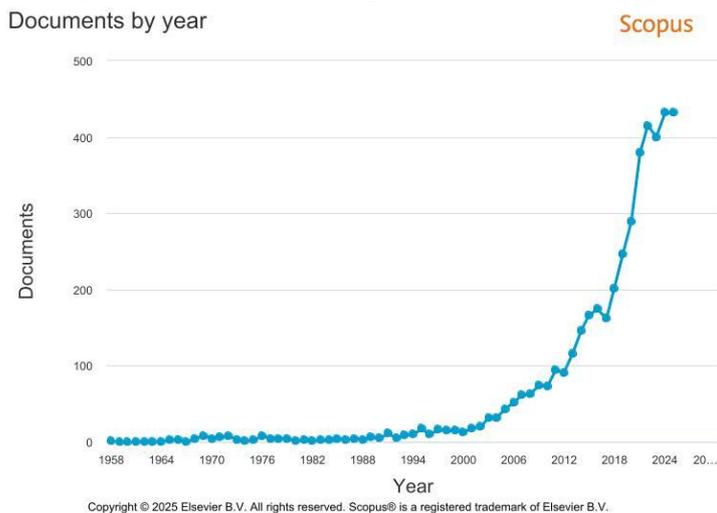


Figure 1. Annual Publication Trends in Suicide Prevention Research

As shown in Figure 1, research on suicide prevention has increased steadily over time. This growing research output is closely related to the recognition of suicide as a major global problem (Gallo et al., 2020). Suicide data indicate a substantial increase over the past several decades, particularly in low- and middle-income countries (De Oliveira et al., 2015). Indonesia is among the countries with a high number of suicide cases, with 600 cases recorded as of May 2025 (Ridwan, 2025). The global suicide rate is estimated at approximately 10.5 per 100,000 individuals, with a marked gender disparity, namely 16.3 per 100,000 among males and 4.6 per 100,000 among females (Khazaei et al., 2019). Other estimates suggest a global suicide rate of 11.6 per 100,000, with notable regional variations, including particularly high rates in Lithuania and South Korea (Khazaei et al., 2019).

Which countries contribute most actively to publications on suicidal ideation prevention based on sustainable social development?

Based on the analysis, Figure 2 presents the countries that contribute most actively to research on suicide prevention. The connecting lines between countries indicate patterns of international collaboration. Overall, a total of 139 countries were identified as contributing to research on suicide prevention.

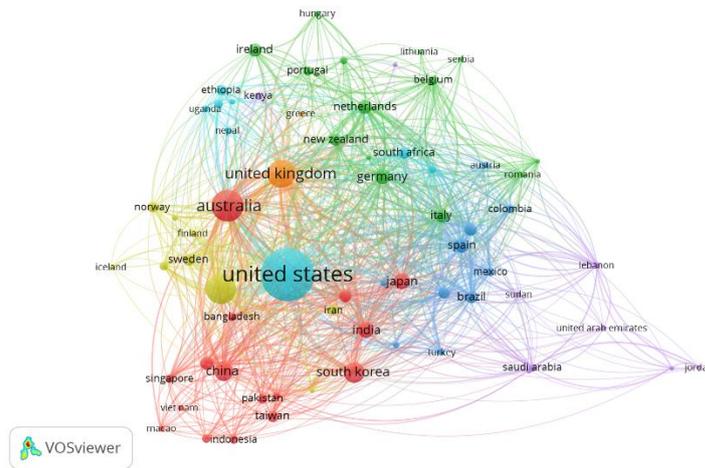


Figure 2. Visualization of the Country Co-authorship Network

Figure 2 shows that the United States is the largest contributor to scientific publications, with 2,136 documents. The United States has indeed dominated research on suicidal ideation, accounting for approximately 80% of the total publications (Farok & Mahmud, 2023). According to the Pan American Health Organization (2021), the United States also has one of the highest suicide mortality rates. This condition is closely related to one of the major public health issues associated with the Sustainable Development Goals (SDGs), as reflected by the high suicide rate in the United States (Costa et al., 2020). Australia follows as the second-largest contributor with 580 publications. Canada ranks next with 503 publications, followed by the United Kingdom with 447 publications. These four countries represent the largest contributors to scientific publications in the field during the period 1958–2025. The United States also records the highest citation volume, with a total of 78,768 citations. Australia ranks second with 17,851 citations, followed by Canada with 15,609 citations, and then other countries. In contrast, Indonesia contributed 23 publications with a total of 125 citations.

Which authors have published the most research on suicidal ideation prevention based on sustainable social development?

Figure 2 presents several authors with the highest publication productivity in suicide prevention research, based on the results of the bibliometric analysis using the VOSviewer software. Nodes that appear larger relative to others indicate that these authors occupy more central positions within the research network. The greater the number of publications associated with a node, the higher the productivity of the corresponding author in this research field.

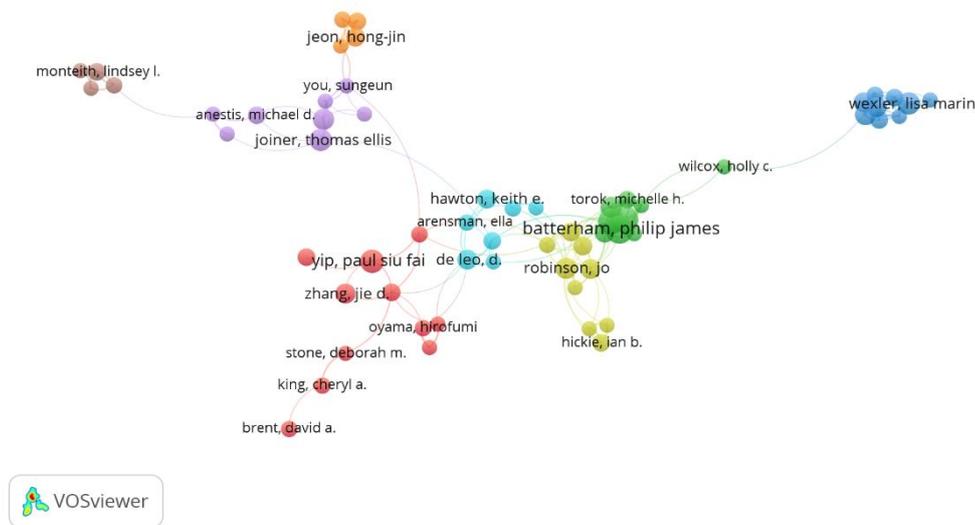


Figure 3. Visualization of the Authorship Network

Figure 3 shows that Philip James Batterham is the most influential author, with 49 publications and a total of 1,962 citations. He is followed by Alison L. Calear, who has contributed 41 publications, and Helen M. Christensen, with 31 publications. Other authors contributed between 1 and 30 publications. This network visualization also illustrates the connections among authors. Authors with stronger and more extensive connections play an important intermediary role within the scientific collaboration network, both within institutions and across countries. This indicates that multidisciplinary and global collaboration an essential aspect in addressing mental health challenges and sustainable social development contributes substantially to the advancement of suicide prevention research.

Furthermore, the dominance of several key authors in this network demonstrates how certain researchers have consistently made significant scientific contributions to the development of suicide prevention research. However, the unequal distribution of publication productivity also suggests the need to strengthen the participation of researchers from underrepresented regions and institutions. These findings highlight the importance of more inclusive and sustainable collaboration to broaden perspectives and contextual understanding in suicide prevention research worldwide.

CONCLUSION

This study demonstrates that research on suicide prevention from the perspective of sustainable social development has experienced significant global growth. The increasing number of publications over time reflects the growing attention of the scientific community to suicide as both a mental health issue and a social development challenge. The bibliometric analysis reveals that research contributions are still dominated by developed countries, particularly the United States. In addition, the presence of several highly productive authors occupying central positions in the collaboration network highlights the important role of key scientific actors in shaping the direction and focus of suicide prevention research.

These findings indicate that multidisciplinary and international collaboration is a key factor in advancing research in this field. This bibliometric analysis provides a comprehensive overview of the structure and trajectory of suicide prevention research and underscores the importance of integrating mental health issues into the sustainable social development agenda.

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