Review Article

Bibliometric Analysis of Literature on Psychological Stress and Head and Neck Cancer (1977-2025)

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ABSTRACT

Psychological stress has been increasingly recognized as an important factor influencing quality of life (QoL), treatment response, and overall outcomes in patients with head and neck cancer (HNC). This bibliometric study provides a comprehensive overview of literature exploring the relationship between psychological stress and HNC from 1987 to 2025. The data were retrieved from the Dimensions database, analyzed using the Biblioshiny application of the R package, and reported according to the GLOBAL guidelines for bibliometric reporting. A total of 206 articles met the inclusion criteria. Results showed a steady increase in publications over time, with an annual growth rate of 7.39% and an average of 23.53 citations per document. The USA led in publication output and citation impact. The most relevant journals were *Supportive Care in Cancer* and *Head & Neck*, indicating an integration of psychosocial aspects within oncology research. The thematic analysis based on keywords demonstrates an integration of clinical oncology with psychosocial, suggesting a transition toward holistic, patient-centered cancer care. Highly cited articles were focused on psychological distress, the psychosocial impact of treatment, and the importance of supportive interventions for both patients and caregivers. Although research exploring the link between psychological stress and HNC has been ongoing for many years, the overall volume of published studies remains low. The findings underscore the need for research in low- and middle-income countries and stronger cross-disciplinary partnerships in the psycho-oncology, medical, and psychological domains for the holistic care of cancer patients. This study contributes to the understanding of psychosocial research in HNC patients and offers directions for future efforts to integrate psychological care into comprehensive cancer management.

Keywords

Head and Neck Carcinoma, HNC, Psychological Stress, Distress, Oral cancer, Oral carcinoma, Biblioshiny, Geographic distribution, Research Focus, Bibliometrics, Publishing Trends, Dimensions database

INTRODUCTION

Head and neck cancer (HNC) is a major global health concern, ranking among the most common malignancies worldwide. It includes malignancies of the oral cavity, pharynx, larynx, nasal cavity, and salivary glands. It is responsible for approximately 890,000 new cases and 450,000 deaths annually [1,2]. The majority of these cases occur in men, with a male-to-female incidence ratio of about 2:1 [2].

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The burden of HNC is hefty in low- and middle-income countries (LMICs), which contribute roughly 70% of new cases and 75% of related deaths [3]. Oral cavity cancers alone accounted for around 355,000 new cases and 177,000 deaths in 2018, with the highest incidence observed in South Asia—such as Pakistan, India, Bangladesh, and Sri Lanka [4]. Age is a crucial epidemiologic factor in HNC. In 2020, 38% of incident HNC cases occurred in individuals aged 65 or older, highlighting the significant impact of age on disease distribution [5]. A study conducted in Bihar found that the oral cavity was the most common site of HNC, accounting for 71.6% in males (n=1949/2723) and 50.5% in females (n=256/507). Within the oral cavity, the buccal mucosa and tongue were the most prevalent subsites [6], with a mean age at diagnosis around 52 years.

A growing body of evidence recognizes psychological stress not only as a factor affecting quality of life(QoL) for HNC patients but potentially as a modifier of disease progression and treatment response. Patients frequently face distress due to functional impairments, visible disfigurement, and the complexity of therapy [7-9]. However, to date, no bibliometric study has been conducted to explore the publication and citation trends, geographical distribution, most common themes, leading journals, and most cited literature on the interplay between psychological stress and HNC. The present study aims to address these knowledge gaps through a focused bibliometric analysis, with the following objectives:

1. Publishing and citation trends.
2. Geographical distribution of research output.
3. Most relevant journals in the field.
4. Most common themes.
5. Most impactful publications or authors influencing the domain.

The findings of this study have several potential implications. By highlighting the most common themes and geographic distribution, the analysis can guide researchers toward underexplored research topics and underrepresented geographical areas. By highlighting publishing and citation trends, the analysis provides insights into the growth, while leading journals inform researchers about research dissemination. In addition, most impactful publications can serve as foundational references for future studies, helping researchers build upon established evidence and inform policymakers about the importance of including mental health and stress management in comprehensive cancer control programs. This work contributes to a deeper understanding of the psychosocial dimensions of HNC and encourages a more holistic approach to patient care.

MATERIALS AND METHODS

Study Design

This study used a bibliometric approach to examine and illustrate patterns of research activity related to psychological stress and oral cancer. The GLOBAL guidelines for reporting bibliometric analyses were followed [10]. The progression from initial identification of records to final inclusion was summarized using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram [11], adapted for bibliometric analysis.

Data Source

The primary data were retrieved from the *Dimensions* database [12] (Digital Science, London, UK), chosen for its broad coverage of peer-reviewed literature and citation data. Its multidisciplinary scope makes it suitable for exploring topics that intersect dentistry, oncology, psychology, and public health.

Search Strategy

The search was performed on 9 September 2025. The strategy was refined through preliminary trials to ensure it was both inclusive of relevant literature and selective enough to limit unrelated material. The final search query applied to 'titles and abstracts' was: ("chronic stress" OR "psychological stress" OR "emotional stress" OR "psychosocial stress" OR "psychological distress" OR "emotional distress" OR "stress biomarker" OR "perceived stress" OR "mental stress" OR "life stress" OR "stressful life event*" OR "occupational stress" OR "work-related stress" OR "stress hormone") AND ("oral" OR "mouth" OR "head and neck" OR "oral cavity" OR "oropharyngeal" OR "lip" OR "tongue" OR "buccal mucosa" OR "gingiva*" OR "pharynx" OR "larynx") AND (cancer OR carcinoma OR neoplasm* OR malignan* OR tumor OR tumour) NOT (anxiety OR depression OR "oxidative stress" OR "cellular stress" OR "endoplasmic stress" OR "nitrosative stress" OR "metabolic stress" OR "oxidative damage" OR "genotoxic stress" OR "hypoxic stress" OR "endocrine stress" OR "respiratory distress" OR "oxidative injury" OR "ER stress")

Eligibility Criteria

Inclusion criteria

- All research papers mentioned as 'Article' in the *Dimensions database*.
- Publications addressing psychological stress/ distress and HNC, where stress is measured as a separate outcome or construct.
- Studies related to QoL, physical distress, or functional distress where psychological stress is measured as a separate construct .
- Studies exploring the relationship between stress hormones and HNC.
- Studies on stress management and coping strategies.
- Studies with a valid PubMed Identifier (PMID).

Exclusion criteria

- Book chapters, books, conference proceedings, and preprints.
- Studies on stress not related to HNC, such as those focusing solely on dental anxiety, depression, temporomandibular disorders, or other studies on stress not directly associated with psychological stress, such as oxidative stress, hypoxic stress, and cellular stress.
- Purely clinical/surgical articles about HNC
- Studies on QOL of cancer patients where stress is not measured as a separate construct.

Screening Process

Records obtained from the search were exported in CSV format for further analysis. The titles and abstracts of the articles were screened manually to remove duplicates and ensure the relevance of content to the topic. In addition, only records with a valid PMID were retained to ensure inclusion of peer-reviewed biomedical literature indexed in PubMed.

Data Handling and Analysis

Bibliographic details, such as author names, publication year, journal, country of origin, citation counts, and keywords, were extracted for analysis. Biblioshiny App (part of the *Bibliometrix* R package) was utilized to perform descriptive statistics, generate a word cloud, and analyze trends.

Ethical Considerations

No human or animal subjects were involved in this study. As the work was based entirely on publicly accessible bibliographic records, formal ethical approval was not required.

RESULTS

Search Results

Analysis in Biblioshiny revealed that the bibliometric dataset on psychological stress and HNC research includes articles published between 1987 and 2025. A total of 463 documents were identified using the search string. Out of these, 429 articles were left after the filter for publication type was applied, which were exported to a CSV file. After manual screening, 206 articles were included for analysis using bibliometric software, Biblioshiny. The PRISMA diagram depicts the number of records at each stage, including reasons for exclusion (Figure 1).

Main Information About The Dataset

Analysis in the Biblioshiny App revealed that the annual growth rate of publications in this area was 7.39%. On average, each document received 23.53 citations and had an average age of 7.54 years. A total of 468 unique terms appeared both as Author Keywords and Keywords Plus. Author keywords (DE) are the keywords provided directly by the authors of the article at the time of submission. Keyword Plus is a set of indexed keywords (ID) that are automatically generated by Clarivate's algorithm in the Web of Science (WoS) database [13]. A total of 1,094 authors contributed to this body of work, with only 5 single-authored papers, and 6.54 co-authors per document, highlighting multi-authored efforts in this area of study. The percentage of international co-authorships was 9.71%.

Publication and Citation Trends

The publication trend on psychological stress and HNC shows a gradual overall increase over time. The earliest publication appeared in 1987, followed by a long period of irregular activity with only a few scattered studies in the 1990s and early 2000s. The number of publications increased after 2014. A spike in Mean Total Citations per year was seen in the year 2001. The number of publications showed a slight decline in the most recent two years. Although research on psychological stress and HNC has a long history, the total number of publications remains limited. Figure 2 shows the number of publications per year and their corresponding mean citation rates, illustrating fluctuations in research output and impact over time.

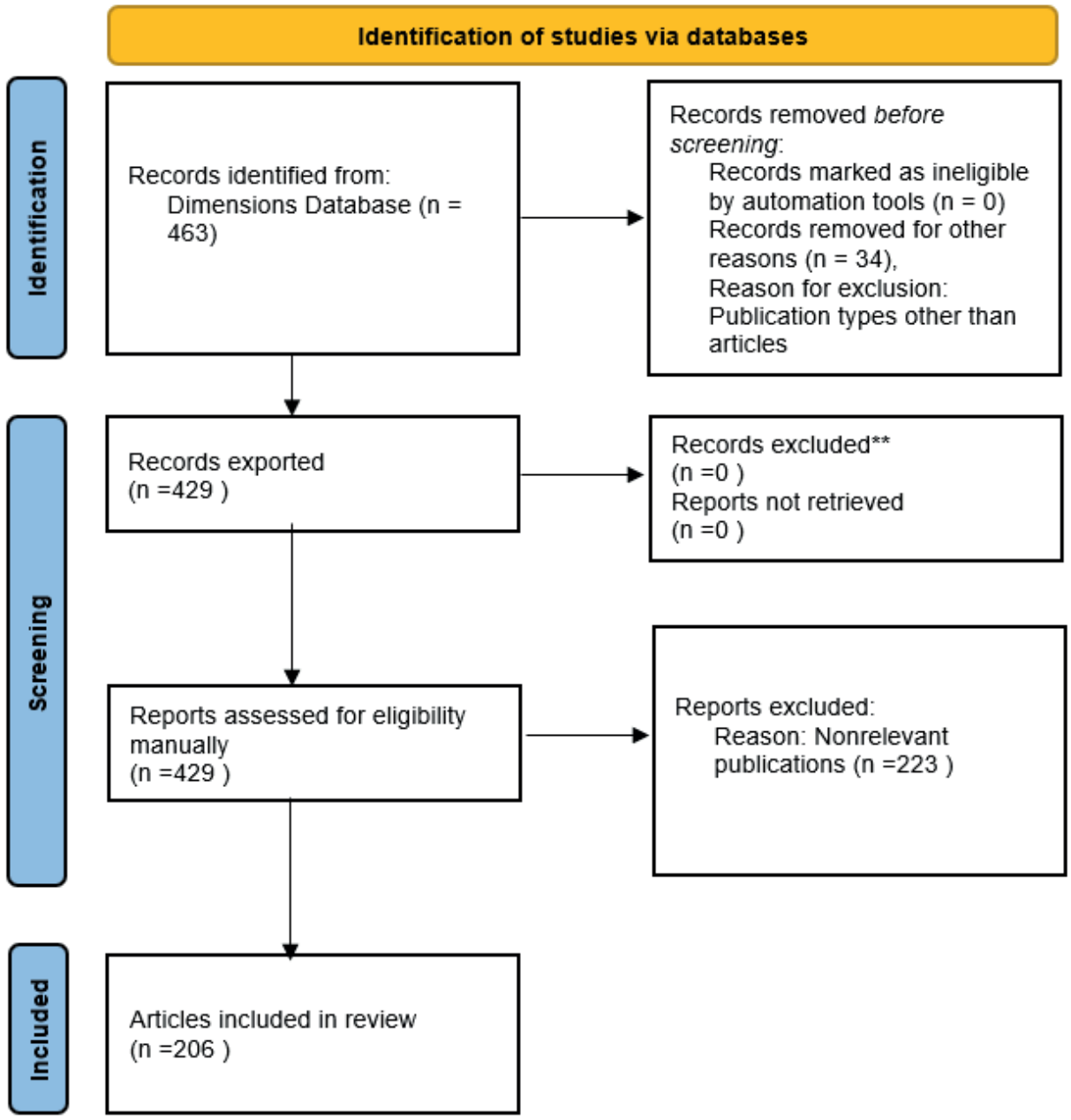

Figure 1: Flow chart of study selection process for bibliometric analysis of literature intersecting psychological stress and head and neck cancer

Geographical Distribution of Research Output and Impact

Country-level research analysis was based on total publications, total citations (TC), and average article citations (AAC). The most productive five countries in research on psychological stress and HNC are the USA (194 articles), China (97), Australia (94), India (91), and the Netherlands (73). Other countries with notable contributions are Canada, Germany, Brazil, Italy, and France (Figure 3). It is noteworthy that a single publication might be credited to more than one country in cases of international collaboration or when

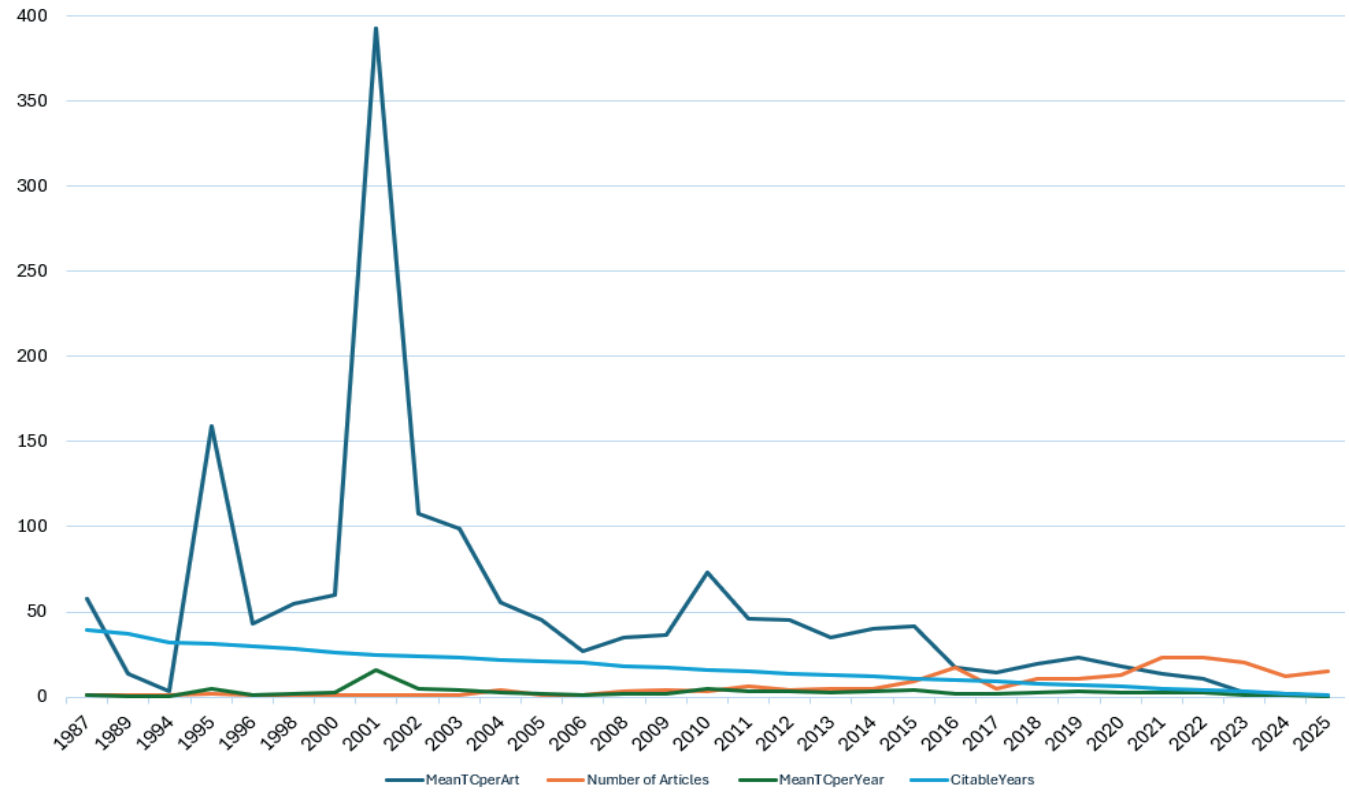

Figure 2: Publication and citation trends in research on psychological stress and head and neck cancer.
Image Credit: Namrata Dagli

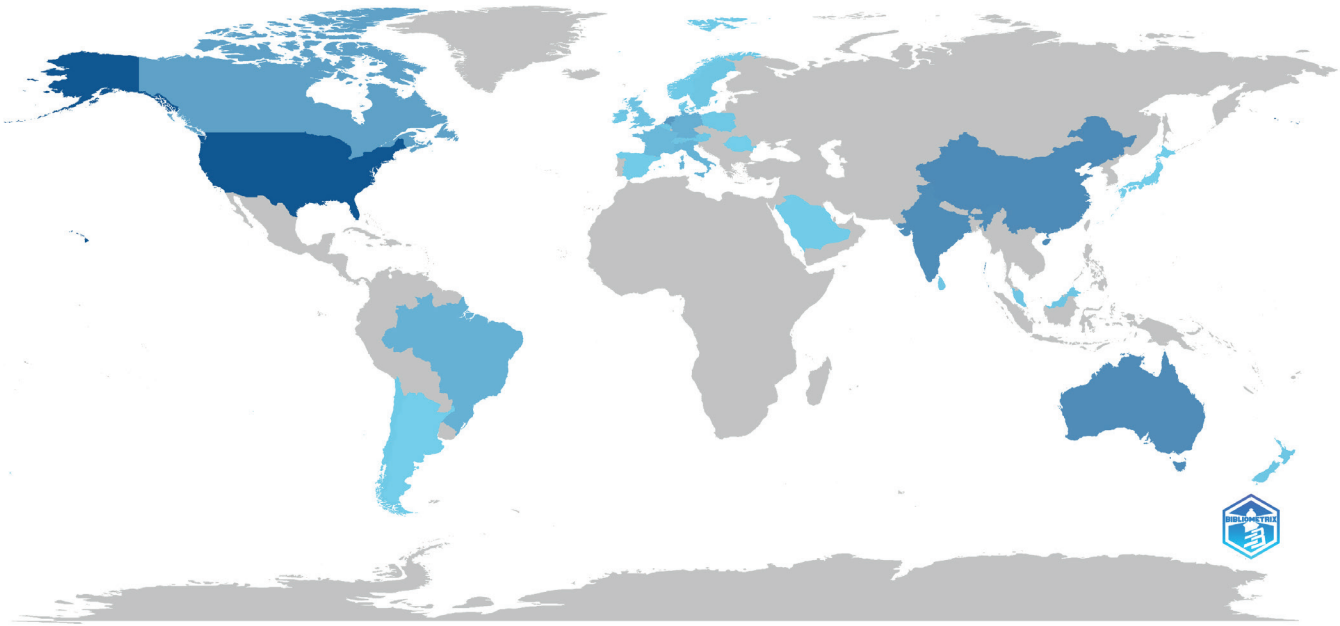

Figure 3: Scientific production by country in research on psychological stress and head and neck cancer. Darker shades of blue represent higher publication counts, lighter shades indicate fewer publications, and grey areas denote no publications.
Image Credit: Namrata Dagli.

authors report multiple institutional affiliations, as the country-level productivity is calculated based on author affiliations. Therefore, the cumulative country counts exceed the total number of unique articles (n = 206). In terms of citations, the USA led with a total of 790 citations (24.70 citations per article). Austria ranked second in citation totals with 393 citations (393 per article), while TC counts for the Netherlands, Australia, and Canada are 311, 282, and 234, respectively. Some contributors stood out for very high AAC, such as Austria (a single publication received 393 citations), Belgium (61.30), and the United Kingdom (38.80). The values of TC and AAC are presented in Table 1.

The analysis of journals shows that the *Supportive Care in Cancer* was the most productive source, publishing 18 articles on the topic. This was followed by *Head & Neck* with 13, *JAMA Otolaryngology – Head & Neck Surgery* with 9, and *Oral Oncology* with 8 articles. *Cancers* and the *European Archives of Oto-Rhino-Laryngology* and *Psycho-Oncology* each published 5 articles. In terms of citation impact, the *British Journal of Cancer* led with 587 total citations, followed by *Head & Neck* and *Supportive Care in Cancer*. Other journals, such as *Oral Oncology*, *psycho-oncology*, and the *European Journal of Cancer Care,* also received notable citations. Total Citations of Most Relevant Journals are presented in Figure 4.

Table 1: Country-wise citation impact metrics in research on psychological stress and head and neck cancer.

Country	TC	Average Article Citations
USA	790	24.70
Austria	393	393.00
Netherlands	311	34.60
Australia	282	16.60
Canada	234	29.20
India	219	12.20
Brazil	214	30.60
Belgium	184	61.30
China	172	10.80
United Kingdom	155	38.80

Most Relevant Sources

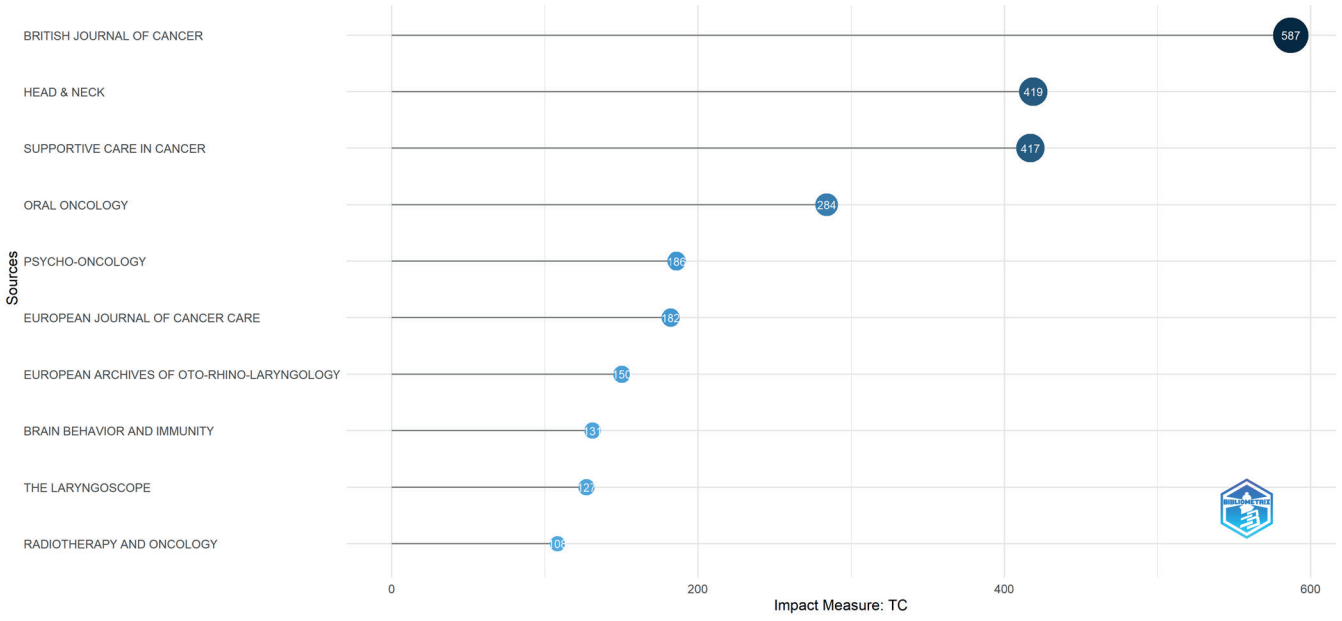

Figure 4: Total citations of most relevant journals publishing on psychological stress and head and neck cancer. Bubble size and darker shade reflect the number of citations. **Image Credit:** Namrata Dagli.

Most Frequently Researched Themes in the Domain

Figure 5 presents a word cloud generated from the co-occurrence of author keywords in publications on psychological stress and HNC. Generic terms such as *humans*, *adults*, *aged*, *young adults*, *female*, and *male* were excluded to focus on subject-specific concepts. The weight of each keyword was determined using the square root of its frequency of occurrence. The most frequently used terms include *head and neck neoplasms*, *quality of life*, *psychological stress*, *cross-sectional studies*, *adaptation psychological*, *survivors*, and *surveys and questionnaires*. Other recurrent terms, such as *palliative care*, *body image*, *social support*, *pain*, and *fatigue,* also appear, indicating the diversity of research themes explored within this field.

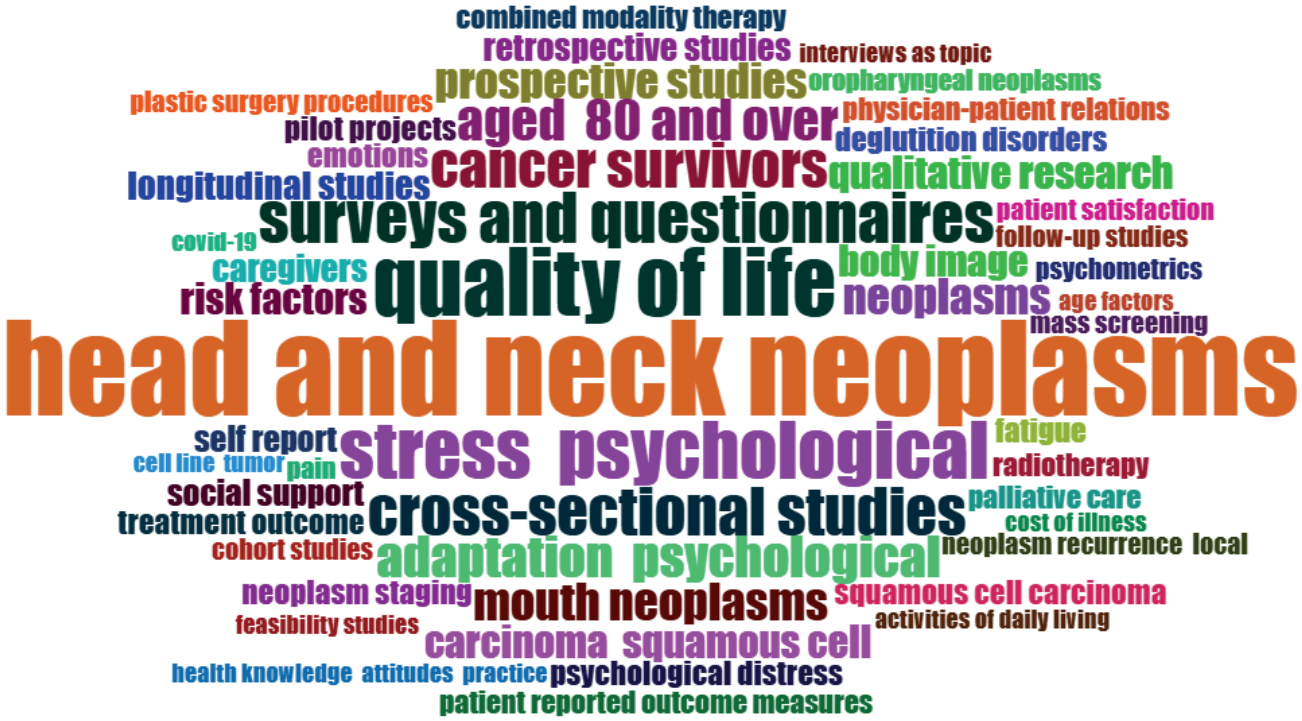

Figure 5: Word Cloud: Displaying most frequently used keywords (Weight: Square root of frequencies)
Image Credit: Namrata Dagli.

The keywords can be classified under the following major themes:

1. Clinical Oncology: head and neck neoplasms, squamous cell carcinoma, mouth neoplasms, oropharyngeal neoplasms, neoplasm staging, neoplasms' local recurrence, radiotherapy, treatment outcome, risk factors, tumor cell line.
2. Psychosocial aspects: psychological stress, psychological distress, QoL, emotions, patient satisfaction, caregivers, physician–patient relations, patient-reported outcome measures, cancer survivors, cost of illness.
3. Patient Care and Rehabilitation: palliative care, fatigue, pain, deglutition disorders, activities of daily living, social support, body image, coping, and psychological adaptation.
4. Research Design and Methods: cross-sectional studies, prospective studies, retrospective studies, qualitative research, longitudinal studies, cohort studies, feasibility studies, pilot projects, follow-up studies, surveys and questionnaires, self-report, interview, mass screening, psychometrics, combined modality therapy.

These central themes highlight that the literature not only addresses clinical treatment but also gives strong attention to psychosocial aspects. Additionally, appropriate methodological approaches were used for studying these outcomes.

Most Cited Articles

Table 2 presents the most cited articles with their citation counts. The earliest influential work was by Bjordal et al., published in 1995 in the *British Journal of Cancer*, which examined the QoL in two groups of HNC patients- receiving conventional radiotherapy and those receiving a slightly hypofractionated regimen. Using a quantitative questionnaire design, the study reported a high prevalence of psychological distress in both the groups, particularly in patients suffering from pain and or having cognitive or social function impairment [14]. Another study by De Boer MF et al in the same year and published in Head and Neck examined long-term survivors of HNC and their rehabilitation outcomes. It found that individuals who underwent extensive treatments, such as laryngectomy or combined surgical procedures, often continue to face challenges like difficulty swallowing and changes in appearance even years after therapy. Additionally, these patients reported higher levels of psychosocial distress compared to those with less invasive treatments. The research also highlighted that these patients experience notable emotional and social difficulties, underscoring the importance of rehabilitation programs that address both physical and psychological needs [15]. Söllner et al. (2001) in the *British Journal of Cancer* advanced this work by focusing on psychological distress and the role of psycho-oncological interventions. Main findings suggest that oncologists often underestimate or overlook patients' levels of distress. Many patients reported insufficient social support and an unmet need for psychosocial services. The findings emphasize the importance of systematic screening and better integration of psychosocial care into oncology practice [16]. Maes A et al. (2002) conducted a study to quantify the prevalence and distress of taste loss at different intervals after radiotherapy for HNC. The study found that taste loss was most pronounced 2 months after radiotherapy, with bitter and salty tastes being the most affected. Gradual recovery was observed during the first year after treatment, but partial taste loss persisted 1–2 years post-treatment, causing slight to moderate discomfort in some patients [17]. Morton RP's 2003 study assessed the QoL in HNC patients over time. The research revealed that while specific physical symptoms like swallowing difficulties improved over time, emotional distress and psychosocial challenges persisted, significantly affecting overall QoL. Additionally, the study highlighted cultural differences in QoL outcomes, emphasizing the need for culturally sensitive approaches in patient care [18]. Bernabé et al. (2010) in *Brain, Behavior, and Immunity* introduced a biomedical-psychological perspective by examining stress, immunity, and oral cancer, showing biological pathways linking psychological stress to disease progression [19]. Lebel et al. (2011) in *Psycho-Oncology* investigated fear of cancer recurrence, a growing theme in survivorship research. Findings revealed that patients often experience social isolation, discrimination, and altered self-perception due to visible disfigurements or perceived social stigmas associated with their condition. These factors contribute to heightened psychological distress, including anxiety and depression [20]. The qualitative longitudinal research by Molassiotis A et al in 2012 on HNC patients highlighted that distress was notably associated with challenges such as unpreparedness for the radiotherapy mask and the interference of symptoms with attempts to maintain normalcy [21]. Badr et al. (2014) conducted a study to examine the trajectories of psychological distress in patients and caregivers during radiotherapy for HNC. The study found that both patient and caregiver distress increased steadily over the course of treatment, peaking at week 5. Increases in patient-rated head and neck-specific physical symptoms had a significant time-varying effect on both patient and caregiver distress. The findings highlight the adverse impact of patient physical symptoms during radiotherapy on both patient and caregiver distress and support a dyadic coping model whereby patients and caregivers manage their distress together as a unit [22]. Wells et al. (2015) conducted a cross-sectional survey to identify the distress, unmet needs, and concerns of HNC survivors within the first five years post-treatment [23]. The study found that one-third of survivors experienced moderate to severe distress, and 74% reported at least one unmet need. Common concerns and unmet needs included oral and eating problems, fear of recurrence, and fatigue. Factors such as being younger, not retired, having a history of feeding tube use, multiple comorbidities, and living alone were associated with higher levels of distress and unmet needs. This more recent study stood out for its high yearly citation rate, emphasizing the importance of psychosocial research in oncology.

Table 2: Most cited articles in research on psychological stress and head and neck cancer.

Paper	Article Titles	Total Citations (TC)	TC per Year
Söllner W [16], 2001, British Journal of Cancer Doi: 10.1054/BJOC.2000.1545	How successful are oncologists in identifying patient distress, perceived social support, and need for psychosocial counseling?	393	15.72
Bjordal K [14], 1995, British Journal of Cancer Doi: 10.1038/Bjc.1995.115	Psychological distress in head and neck cancer patients 7-11 years after curative treatment.	194	6.26
Bernabé Dg [19], 2010, Brain Behavior and Immunity Doi: 10.1016/J.BBI.2010.12.012	Stress hormones increase cell proliferation and regulate interleukin-6 secretion in human oral squamous cell carcinoma cells.	131	8.19
Lebel S [20], 2011, Psycho-Oncology Doi: 10.1002/PON.2063	The psychosocial impact of stigma in people with head and neck or lung cancer.	125	8.33
De Boer MF [15], 1995, Head & Neck Doi: 10.1002/HED.2880170608	Rehabilitation outcomes of long-term survivors treated for head and neck cancer.	124	4.00
Maes A [17], 2002, Radiotherapy and Oncology, Doi: 10.1016/S0167-8140(02)00025-7	De Gustibus: time scale of loss and recovery of tastes caused by radiotherapy.	108	4.50
Wells M, 2015 [23], European Journal of Cancer Care, Doi: 10.1111/ECC.12370	Distress, concerns, and unmet needs in survivors of head and neck cancer: a cross-sectional survey. European journal of cancer care.	103	9.36
Morton Rp [18], 2003, The Laryngoscope, Doi: 10.1097/00005537-200307000-00001	Studies in the quality of life of head and neck cancer patients: results of a two-year longitudinal study and a comparative cross-sectional cross-cultural survey.	99	4.30
Molassiotis A [21], 2012, Palliative & Supportive Care, Doi:10.1017/S147895151200020X	Symptom experience and regaining normality in the first year following a diagnosis of head and neck cancer: a qualitative longitudinal study.	94	6.71
Badr H [22], 2014, Oral Oncology, doi: 10.1016/j.oraloncology.2014.07.003.	Psychological distress in patients and caregivers over the course of radiotherapy for head and neck cancer.	87	7.25

DISCUSSION

The observed increase in publications and the annual growth rate suggest a growing recognition of the link between psychological stress and HNC within the scientific community. The moderate citation rate (23.53 per document) may reflect both the multidisciplinary nature of this research area and its developing status in psycho-oncology and behavioral medicine [24]. The relatively high number of co-authors per paper indicates that research in this field often requires collaboration across disciplines such as oncology, psychology, and dentistry, where integrated approaches are essential for exploring biopsychosocial factors in cancer outcomes [25]. However, the international collaboration rate of 9.71% suggests that cross-border partnerships remain limited, possibly due to variations in research funding, healthcare infrastructure, or regional differences in cancer epidemiology. Encouraging broader global collaboration could enhance methodological rigor, cross-cultural understanding, and clinical applicability of findings in psychological stress and HNC research.

Despite the dataset covering nearly four decades (1987–2025), the total number of published articles (206) remains relatively small. This limited output suggests that the relationship between psychological stress and HNC has not received extensive attention compared with other psycho-oncology topics. The small volume of studies may be due to the clinical complexity of

HNC, limited integration between oncology and behavioral science, or a lack of standardized tools to measure stress in cancer populations [26-27]. Increasing awareness of psychosocial factors in cancer care has gained momentum only in recent years, which may explain the modest growth trend observed. Continued interdisciplinary collaboration could help bridge this research gap and promote a more comprehensive understanding in this domain.

The observed publication pattern suggests that research has evolved slowly, possibly due to limited early recognition of psychosocial factors in oncology. The gradual increase in output after 2014 coincides with a broader shift toward holistic and patient-centered approaches in cancer care, emphasizing the role of mental health and QoL in treatment outcomes [26]. The recent decrease in the number of publications could be explained by delayed database updates or shifting research priorities following the COVID-19 pandemic, which redirected focus toward mental health and broader oncological concerns.

The scientific production analysis of countries shows a clear divide between highly productive countries and those that are highly influential. The USA dominates in both volume and overall citations, which is consistent with its strong tradition in oncology and psycho-oncology research. This distribution reflects disparities in research infrastructure, funding, and integration of psychosocial care within oncology settings [28-30]. The dominance of Western countries suggests that much of the available evidence is drawn from populations with strong healthcare systems and established multidisciplinary cancer care. At the same time, contributions from developing regions remain limited. India, a lower-middle-income country [31], continues to face constraints such as limited psychosocial oncology resources and under-validated assessment tools [32,33]. The need for strengthening psycho-oncology research and clinical capacity is particularly urgent in LMICs, where the burden of HNC is cumbersome, accounting for approximately 70% of new cases and 75% of related deaths [3]. In contrast, China and Brazil, both upper-middle-income countries, have established psycho-oncology frameworks but still encounter barriers, including uneven regional development, inadequate integration of psychosocial services, and cultural reluctance toward mental-health disclosure [34-37]. Austria's exceptionally high AAC of 393 per publication may be attributed to the significant impact of a single highly cited paper, which likely skews the national average. The presence of nations with high citation averages despite relatively fewer publications, such as Brazil and the UK, suggests that influential work can also emerge from smaller research groups with a highly specialized focus. This indicates that while productivity ensures visibility, the quality and novelty of research are critical in driving citation impact [38]. Overall, the field benefits from high-volume research, which builds a strong foundation and highly influential studies guiding the direction of future research.

The journal analysis reveals that research on psychological stress and HNC is primarily published in oncology and psycho-oncology–focused journals, reflecting the interdisciplinary nature of this field. The prominence of *Supportive Care in Cancer* and *Head & Neck* highlights the growing emphasis on integrating psychosocial aspects into oncological care, where psychological stress is increasingly recognized as an important determinant of patient well-being and treatment outcomes [28]. The strong citation performance of established oncology journals such as the *British Journal of Cancer* suggests that studies addressing psychological dimensions of cancer are gaining visibility within mainstream oncology literature. Meanwhile, specialized journals like *Psycho-Oncology* and the *European Journal of Cancer Care* contribute to advancing research on emotional, behavioral, and social factors affecting patients with HNC. The presence of general oncology journals alongside supportive and palliative care outlets shows that this research area is not limited to one niche but instead cuts across clinical treatment, survivorship, and psychosocial care. This pattern suggests growing recognition of the psychological dimensions of cancer care. However, the relatively lower production in psycho-oncology–focused journals indicates that there is still space to strengthen integration between psychological research and mainstream oncology.

The thematic analysis shows that research includes multiple interconnected domains, reflecting the complex and multidisciplinary nature of this field. The prominence of clinical oncology terms underscores the

focus on disease characteristics, treatment outcomes, and recurrence patterns, while the frequent appearance of psychosocial concepts such as QoL, emotional adjustment, and social support highlights the growing recognition of the psychological burden associated with HNC. The inclusion of terms related to palliative care, coping, and daily functioning suggests an increasing emphasis on survivorship and rehabilitation, aligning with the global shift toward patient-centered cancer care. Furthermore, keywords indicate a balanced use of both quantitative and qualitative approaches, reflecting efforts to capture the multifaceted experiences of patients. The diversity of research themes points to a maturing field that integrates biological, psychological, and social dimensions in understanding and managing stress among individuals with HNC.

The most cited articles in the domain highlight a consistent research focus on understanding the multifaceted impact of the disease on patients' psychological, social, and functional well-being. Prominent publications in journals such as the *British Journal of Cancer*, *Head & Neck*, *Oral Oncology*, and *Psycho-Oncology* reflect the interdisciplinary scope of this field, including clinical oncology, behavioral medicine, and psychosocial rehabilitation. Thematically, the most influential research emphasizes three major areas: first, the prevalence and management of psychological distress among patients and survivors; second, the psychological distress due to physical symptoms (such as pain, taste alteration, disfigurement) and related to therapy (such as- feeding tube, radiotherapy mask); and third, the role of social support, stigma, and caregiver distress in overall recovery [14-16,20,22]. The journals publishing these studies often serve as bridges between oncology and mental health research, promoting integrative approaches that view psychological care as an essential part of cancer treatment. The citation patterns across these articles suggest that works addressing both clinical and psychosocial dimensions tend to achieve greater scholarly impact.

During the data screening process, one article published in 2001 was found to have an unusually high citation count (393 citations). As this single record had the potential to influence citation-based indicators, a sensitivity check was conducted. Key bibliometric parameters were recalculated after excluding this article, and the results were compared with the complete dataset to evaluate any variations in overall patterns and indicator stability. When included, the average number of citations per document was 23.53; after exclusion, this value decreased to 21.73. Other parameters, such as the annual growth rate, number of journals, and mean number of co-authors per document, remained unchanged. The average age of documents slightly decreased from 7.54 to 7.46 years after the exclusion process. The journal that published the highly cited paper moved from the first to the fourth position among the top-cited journals when this record was removed. Similarly, Austria, which was represented by this single article, was no longer listed among the most impactful countries in the country-level analysis. This individual paper also explained the visible peak in publication and citation trends for the year 2001. Although the exclusion of the outlier produced minor quantitative changes, it did not alter the general publication or collaboration trends. This highlights the importance of considering the possible effect of outliers, particularly for small datasets, to ensure that the reported trends accurately reflect the broader research landscape.

Strengths

This study is the first comprehensive bibliometric analysis exploring the intersection of psychological stress and HNC across nearly four decades (1987–2025). By using the Dimensions database, which offers extensive coverage across multidisciplinary domains, the analysis captured a broad spectrum of literature spanning oncology, psychology, and rehabilitation. The application of the GLOBAL reporting guidelines ensured methodological transparency. The use of Biblioshiny facilitated detailed mapping of publication trends, geographical distribution, and thematic analysis, providing valuable insights for clinicians and researchers interested in psycho-oncology. The inclusion of citation-based indicators strengthened the identification of influential studies and countries shaping the field. Moreover, the study included an additional check for the effect of a highly cited outlier article on citation-based indicators. This step strengthened the reliability of the findings by confirming that the overall patterns remained stable even after excluding the outlier. The key findings of the study are mentioned in Table 3.

Table 3: Key findings of bibliometric analysis of literature on psychological stress and head and neck cancer.

Serial Number	Key-findings
1	**Publishing and Citation Trends** Publications on psychological stress and head and neck cancer have increased steadily since 2014, showing an annual growth rate of 7.39%. The mean citation rate of 23.53 per article indicates moderate but growing academic interest in this field.
2	**Geographical Distribution of Research Output** The United States was the most productive and influential contributor, followed by China, Australia, India, and the Netherlands. International collaboration was limited (9.71%), suggesting the need for stronger global partnerships.
3	**Most Relevant Journals in the Field** *Supportive Care in Cancer* and *Head & Neck* were the most frequent publication sources, while the *British Journal of Cancer* received the highest total citations. This reflects increasing acceptance of psychosocial research within mainstream oncology journals.
4	**Most Common Themes** Four dominant themes emerged: clinical oncology, psychosocial aspects, patient care and rehabilitation, and research design and methodology. The most frequently used keywords include *quality of life*, *psychological stress*, *cross-sectional studies*, *psychological adaptation*, *survivors*, and *surveys and questionnaires. These indicate the most common research focus, design, and population.*
5	**Most Influential Publications** Highly cited articles address key psychosocial dimensions of HNC, including quality of life, psychological distress, fear of recurrence, coping, and the biological links between stress and disease progression. They also highlight the persistent emotional, functional, and social challenges faced by patients and caregivers. The reasons reported for high distress were swallowing difficulty, taste loss, unpreparedness for the radiotherapy mask, a feeding tube, and living alone.

Limitations

Despite its comprehensive scope, this study has several limitations. The analysis relied solely on the Dimensions database; thus, publications indexed exclusively in other repositories (e.g., Scopus, Web of Science, or PubMed) may have been missed. Additionally, bibliometric indicators such as citation counts are influenced by time since publication and do not necessarily reflect research quality or clinical significance. Another limitation arises from potential inaccuracies in author affiliations and keyword indexing, which may affect country-level and thematic classifications [39]. Finally, since the analysis is descriptive, it cannot infer causal relationships between psychological stress and cancer outcomes.

Future Study Recommendations

Future research should focus on developing standardized frameworks to assess psychological stress specifically among patients with HNC. Current studies vary widely in their definitions, measurement tools, and reporting methods, making cross-comparison difficult. Collaborative, multicenter studies that include diverse cultural and socioeconomic contexts would help in understanding how stress and coping mechanisms differ across populations. Greater emphasis should also be placed on integrating biological markers of stress with psychosocial assessments to provide a more holistic understanding of its impact on disease progression and recovery. Longitudinal designs are needed to track changes in psychological distress from diagnosis through survivorship, as most existing studies are cross-sectional. Additionally, expanding research from high-income countries to low- and middle-income regions could address global disparities in psycho-oncology research and help tailor interventions to local healthcare settings. Strengthening partnerships between oncologists, psychologists, and public health professionals will be essential for translating these insights into comprehensive, patient-centered cancer care.

CONCLUSION

This bibliometric study reveals that research on psychological stress in relation to HNC has evolved gradually, with a steady increase in publications after 2014 reflecting growing recognition of psychosocial dimensions in oncology. Despite this progress, the overall volume remains limited compared with broader psycho-oncology domains. The United States, China, Australia, and India emerged as key contributors. *Supportive Care in Cancer* and *Head & Neck* were the most frequent publication sources, while the *British Journal of Cancer* received the highest total citations. The most frequently used keywords include *QoL*, *psychological stress*, *cross-sectional studies*, *psychological adaptation*, *survivors*, and *surveys and questionnaires*. Thematic analysis based on keywords revealed four clusters related to clinical oncology, psychosocial dimensions, patient care and rehabilitation, and research methodologies, indicating the most common themes in the domain. Highly cited articles were focused on key psychosocial dimensions of HNC, including QoL, psychological distress, fear of recurrence, coping, and the link between stress hormones and

disease progression. They also highlight the persistent emotional, functional, and social challenges faced by patients and caregivers, emphasizing psychosocial care as an integral part of head and neck care and advocating the need for interdisciplinary collaboration between oncologists, psychologists, and rehabilitation specialists. The reasons for high distress mentioned in the most influential articles were swallowing difficulty, taste loss, unpreparedness for the radiotherapy mask, feeding tube, multiple comorbidities, and living alone.

Future research should aim to strengthen international collaboration, standardization of stress-assessment tools for cancer patients, and include underrepresented populations from low- and middle-income countries. In addition, most of the existing studies are based on self-reported survey questionnaires and employ cross-sectional designs; therefore, there is a need for more longitudinal and objective research approaches to establish causal relationships and enhance the validity of findings. The findings serve as a foundation for guiding future psycho-oncological research, integrating stress management into clinical pathways, and shaping policies for comprehensive cancer care.

Consent for Publication

The author has reviewed and approved the final version and agrees to be accountable for all aspects of the work, including any accuracy or integrity issues.

Disclosure

Mainul Haque works as an editorial team member of the Bangladesh Journal of Medical Science, Bangladesh. The remaining authors declare that they do not have any financial involvement or affiliations with any organization, association, or entity directly or indirectly related to the subject matter or materials presented in this review paper.

Data Availability

Information for this review paper is taken from freely available sources.

Authorship Contribution

All authors contributed significantly to the work, whether in the conception, design, utilization, collection, analysis, or interpretation of data, or all these areas. They also participated in the paper's drafting, revision, or critical review, gave their final approval for the version that would be published, decided on the journal to which the article would be submitted, and made the responsible decision to be held accountable for all aspects of the work.

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