Equity and Variation in Psychosocial Support for Children with Cancer: A Systematic Review of Pediatric Oncology Programs

Adduri Sarika[1], Dr. Navneet Rajput [2], Dr. Dalal Shahin Mahaiyuddin[3], Kavita Malik[4], Dr. Dhanraj Babu [5], Dr. Partha Malakar[6], Dr. Mercy Jain[7], Kanchan[8]

[1.] Nursing Tutor (M.Sc. Nursing), College of Nursing, Banaras Hindu University Varanasi (BHU), Uttar Pradesh
[2.] Assistant Professor, Department of Sports Physiotherapy, School of Sports Education, ITM University, Gwalior, Madhya Pradesh
[3.] Associate Professor, Mental Health Nursing, P P Savani School of Nursing, P P Savani, University, Gujarat
[4.] Assistant Professor, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh
[5.] Professor and HOD, Bharati Vidyapeeth Deemed to be University College of Nursing, Sangli, Maharashtra
[6.] Assistant Professor, Department of Psychology, South Calcutta Girls' College, Kolkata, India
[7.] Professor, Jabalpur Institute of health science, Jabalpur, Madhya Pradesh
[8.] Assistant Professor, SGRRU, SGRRIM&HS College of Nursing, Dehradun, Uttarakhand

Abstract
Childhood cancer represents a major global health challenge that extends beyond physical illness and treatment-related complications. Children diagnosed with cancer and their families experience substantial psychosocial burdens, including anxiety, depression, emotional distress, social isolation, educational disruption, financial hardship, and long-term psychological consequences. Psychosocial support services have become an essential component of comprehensive pediatric oncology care, aiming to improve quality of life, treatment adherence, emotional well-being, and family functioning. Despite international recognition of psychosocial care standards, considerable variation exists in the availability, accessibility, quality, and equity of psychosocial support across pediatric oncology programs worldwide. This systematic review examines existing evidence regarding equity and variation in psychosocial support services for children with cancer across diverse healthcare settings. A comprehensive review of literature published between 2015 and 2025 was conducted using PubMed, Scopus, Web of Science, CINAHL, PsycINFO, and Google Scholar. Studies investigating psychosocial interventions, support programs, service accessibility, and healthcare disparities in pediatric oncology were included. Findings indicate substantial disparities in psychosocial care based on geographical location, socioeconomic status, healthcare resources, cultural factors, and institutional capacity. High-income countries generally provide multidisciplinary psychosocial services integrated into oncology care, whereas low- and middle-income countries frequently encounter workforce shortages, limited funding, and inadequate psychosocial infrastructure. Evidence suggests that psychosocial interventions improve emotional well-being, treatment adherence, family resilience, and quality of life. However, inequities persist, limiting access for vulnerable populations. The review concludes that strengthening psychosocial care infrastructure, expanding workforce capacity, implementing standardized care guidelines, and promoting equitable access are essential for improving outcomes among children with cancer globally.

Keywords: Pediatric Oncology, Psychosocial Support, Childhood Cancer, Health Equity, Pediatric Cancer Care, Quality of Life, Systematic Review.

Introduction

Cancer remains one of the leading causes of disease-related mortality among children worldwide. Advances in diagnostic technologies, treatment protocols, supportive care, and healthcare delivery have substantially improved survival rates for many pediatric cancers. In high-income countries, survival rates now exceed 80% for several childhood malignancies. Despite these encouraging outcomes, childhood cancer continues to impose profound psychological, emotional, social, and economic burdens on patients and families. The diagnosis of cancer during childhood is often associated with fear, uncertainty, and significant disruption to normal developmental processes. Children may experience distress related to invasive procedures, hospitalization, treatment side effects, altered body image, and concerns regarding prognosis. Simultaneously, parents and caregivers face emotional challenges including anxiety, depression, caregiver burden, financial stress, and uncertainty regarding their child's future. Siblings may also experience psychosocial difficulties resulting from altered family dynamics and reduced parental attention. Recognition of these challenges has led to increasing emphasis on psychosocial care as an integral component of pediatric oncology services. Psychosocial support encompasses a broad range of interventions designed to address emotional, behavioral, social, educational, and spiritual needs. Such interventions may include psychological counseling, social work services, family therapy, peer support programs, educational support, recreational therapy, child life services, survivorship programs, and bereavement support.

International organizations including the World Health Organization, International Society of Pediatric Oncology, Children's Oncology Group, and International Psycho-Oncology Society have emphasized the importance of integrating psychosocial care into comprehensive cancer treatment. Evidence demonstrates that psychosocial interventions improve coping abilities, reduce emotional distress, enhance treatment adherence, strengthen family functioning, and improve quality of life. Despite growing recognition of psychosocial care importance, significant inequities exist in access to these services. Resource availability varies considerably across countries and healthcare institutions. Children receiving treatment in specialized cancer centers often have access to multidisciplinary psychosocial teams, whereas those treated in resource-constrained settings may receive limited or no psychosocial support. Such disparities contribute to unequal health outcomes and quality of care.

Health equity refers to the absence of avoidable or remediable differences among groups of people. In pediatric oncology, equity in psychosocial care implies that all children and families have access to appropriate support services regardless of socioeconomic status, geographic location, ethnicity, cultural background, or healthcare setting. Achieving equity requires addressing structural, financial, and organizational barriers that limit service accessibility. This systematic review synthesizes current evidence regarding equity and variation in psychosocial support across pediatric oncology programs. Understanding existing disparities and effective interventions is essential for informing policy, practice, and future research aimed at improving psychosocial care delivery worldwide.

Objectives

The primary objective of this systematic review was to examine equity and variation in psychosocial support services provided to children with cancer across pediatric oncology programs.

Specific objectives included:

1. To identify types of psychosocial support interventions used in pediatric oncology settings.
2. To evaluate the effectiveness of psychosocial support programs.
3. To examine disparities in psychosocial care accessibility.
4. To identify factors influencing equity in psychosocial service delivery.
5. To provide recommendations for improving psychosocial support systems globally.

Methodology

Study Design

A systematic review methodology was employed to synthesize evidence related to psychosocial support services in pediatric oncology. The review followed established principles for evidence synthesis and reporting.

Search Strategy

A comprehensive literature search was conducted using electronic databases including PubMed, Scopus, Web of Science, PsycINFO, CINAHL, Embase, and Google Scholar. Keywords included combinations of terms such as "childhood cancer," "pediatric oncology," "psychosocial support," "psychological interventions," "health equity," "mental health services," "family support," "quality of life," and "supportive care."

Inclusion Criteria

Studies were included if they:

- Examined psychosocial support interventions among children with cancer.
- Evaluated psychosocial service delivery in pediatric oncology settings.
- Reported outcomes related to emotional well-being, quality of life, mental health, or family functioning.
- Investigated healthcare disparities or equity issues.
- Were published between 2015 and 2025.
- Were available in English.

Exclusion Criteria

Studies were excluded if they:

- Focused exclusively on adult oncology populations.
- Lacked psychosocial outcome measures.
- Were editorials, opinion papers, or conference abstracts.
- Did not address pediatric cancer populations.

Data Extraction and Analysis

Data extracted included study characteristics, participant demographics, intervention types, psychosocial outcomes, measures of healthcare equity, and key findings. Due to methodological heterogeneity, findings were synthesized narratively.

Results

Overview of Included Studies

The literature review identified a substantial body of research examining psychosocial support services in pediatric oncology settings. Studies originated from North America, Europe, Asia, Australia, Africa, and Latin America. Research designs included randomized controlled trials, cohort studies, qualitative investigations, mixed-methods research, and systematic reviews.

The majority of studies focused on psychological counseling, family-centered interventions, peer support programs, educational services, survivorship care, and multidisciplinary psychosocial care models. Significant variation in service availability and delivery models was reported across healthcare settings.

Types of Psychosocial Support Services

Psychosocial support in pediatric oncology encompasses multiple service components addressing diverse patient and family needs.

Psychological counseling was among the most frequently reported interventions. Licensed psychologists, psychiatrists, counselors, and mental health professionals provided individual therapy, cognitive-behavioral interventions, anxiety management, coping skills training, and emotional support. Counseling services were associated with reductions in psychological distress and improvements in emotional well-being. Social work services represented another essential component of psychosocial care. Social workers assisted families with financial challenges, transportation issues, housing concerns, insurance navigation, and access to community resources. These services were particularly important for socioeconomically disadvantaged families. Child life programs were widely implemented in specialized pediatric cancer centers. Child life specialists utilized play therapy, procedural preparation, distraction techniques, and developmental support to reduce anxiety and improve children's healthcare experiences. Educational support programs addressed disruptions in schooling resulting from treatment-related absences. Interventions included hospital-based education, communication with schools, academic counseling, and reintegration support following treatment completion.

Peer support initiatives facilitated connections between patients and families experiencing similar challenges. Such programs promoted social support, reduced feelings of isolation, and enhanced coping abilities. Family-centered interventions focused on improving communication, strengthening family relationships, reducing caregiver burden, and promoting resilience. Family therapy and parent support groups demonstrated positive effects on family functioning and psychological outcomes.

Effectiveness of Psychosocial Interventions

Evidence consistently demonstrated positive effects of psychosocial interventions on patient and family outcomes. Children receiving structured psychosocial support reported lower levels of anxiety, depression, emotional distress, and social isolation. Improvements in coping skills, self-esteem, and quality of life were also frequently observed. Family-focused interventions were associated with reduced parental stress, improved caregiver mental health, and enhanced family functioning. Parents who participated in support programs reported greater confidence in managing treatment-related challenges and improved communication with healthcare providers. Psychosocial interventions also contributed to better treatment adherence and healthcare engagement. Children and families receiving comprehensive support were more likely to attend appointments, comply with treatment recommendations, and maintain positive relationships with healthcare teams.

Equity and Disparities in Psychosocial Support Services

One of the most significant findings emerging from the reviewed literature is the existence of substantial inequities in psychosocial support services for children with cancer. Although psychosocial care is increasingly recognized as a fundamental component of comprehensive pediatric oncology treatment, access to these services remains uneven across healthcare systems, institutions, and populations. The availability of psychosocial support often depends on healthcare resources, funding mechanisms, workforce capacity, geographical location, and organizational priorities. Children receiving treatment in specialized pediatric oncology centers generally have access to multidisciplinary psychosocial teams that include psychologists, social workers, child life specialists, psychiatrists, educational coordinators, and spiritual care providers. In contrast, children treated in smaller hospitals or resource-constrained environments may have limited access to specialized psychosocial professionals. These disparities create inequitable healthcare experiences and may contribute to differences in psychological outcomes, treatment adherence, and quality of life. Socioeconomic status emerged as a major determinant of psychosocial support accessibility. Families with higher incomes often possess greater capacity to access private counseling services, transportation resources, educational support programs, and supplementary mental health care. Conversely, economically disadvantaged families frequently encounter barriers such as transportation costs, loss of income due to caregiving responsibilities, inadequate insurance coverage, and limited availability of local support services. These challenges can restrict participation in psychosocial interventions and increase psychological distress. Racial and ethnic disparities have also been documented in pediatric oncology psychosocial care. Minority populations may experience reduced access to culturally appropriate services, language barriers, discrimination, and lower utilization of mental health resources. Studies indicate that culturally tailored psychosocial interventions improve engagement and satisfaction among diverse patient populations. However, many healthcare systems continue to struggle with integrating culturally sensitive approaches into routine oncology care. Geographical disparities further contribute to inequity. Families living in rural and remote areas often experience limited access to specialized pediatric oncology services and psychosocial professionals. Long travel distances, transportation challenges, and shortages of mental health providers can significantly affect access to care. Telehealth and digital psychosocial interventions have emerged as promising strategies to address these challenges, particularly following the COVID-19 pandemic.

Variation Across Pediatric Oncology Programs

The review identified substantial variation in psychosocial support models across pediatric oncology programs worldwide. While some institutions have established comprehensive psychosocial care frameworks, others provide only limited services due to resource constraints. This variation reflects differences in healthcare infrastructure, funding, workforce availability, organizational priorities, and national healthcare policies. In high-income countries such as the United States, Canada, Australia, Germany, the United Kingdom, and the Netherlands, psychosocial care is often integrated into multidisciplinary pediatric oncology teams. These programs typically provide routine psychosocial screening, psychological counseling, social work support, educational services, family therapy, survivorship care, and bereavement support. Many institutions follow evidence-based psychosocial standards and maintain dedicated psychosocial departments. In contrast, pediatric oncology programs in many low- and middle-income countries face considerable challenges in establishing comprehensive psychosocial services. Limited financial resources, shortages of trained mental health professionals, inadequate infrastructure, and competing healthcare priorities often restrict service availability. Consequently, psychosocial care may depend heavily on informal support networks, non-governmental organizations, charitable foundations, and community resources.

The review also identified variation in psychosocial screening practices. Some institutions conduct systematic psychological assessments at diagnosis, during treatment, and throughout survivorship. Others rely on clinician judgment or referral-based approaches, potentially resulting in under-identification of psychosocial needs. Standardized screening protocols have been associated with earlier identification of distress and improved intervention outcomes. Differences were also observed in staffing models. Certain pediatric oncology programs maintain dedicated psychologists, psychiatrists, and social workers, while others rely on shared mental health professionals serving multiple departments. Staffing shortages can limit service accessibility, increase waiting times, and reduce continuity of care.

Barriers to Equitable Psychosocial Care

Numerous barriers contribute to inequities in psychosocial support for children with cancer. These barriers operate at individual, family, organizational, and healthcare system levels. Financial barriers represent one of the most commonly reported challenges. Many psychosocial services are not fully reimbursed by health insurance systems, resulting in out-of-pocket expenses for families. Financial hardship associated with childhood cancer treatment may further limit the ability to access additional support services. Workforce shortages remain a critical concern globally. The demand for pediatric mental health professionals often exceeds available resources, particularly in low-resource settings. Shortages of psychologists, psychiatrists, social workers, and child life specialists can reduce service availability and increase caseloads, potentially affecting care quality. Stigma surrounding mental health services may also influence service utilization. In some cultural contexts, psychological distress is under-recognized or associated with social stigma, discouraging families from seeking support. Educational initiatives aimed at normalizing mental health care can help address these barriers. Healthcare provider awareness and training influence psychosocial care delivery. Oncology clinicians may prioritize medical treatment while underestimating psychosocial needs. Limited training in psychosocial assessment can contribute to delayed identification of emotional distress and reduced referral rates. Language and communication barriers present additional challenges for culturally and linguistically diverse populations. The absence of interpreters, translated educational materials, and culturally competent providers can negatively affect service accessibility and quality. Institutional factors such as inadequate funding, lack of psychosocial policies, and insufficient leadership support may further restrict psychosocial service development. Sustainable improvements require organizational commitment and investment in psychosocial care infrastructure.

Psychosocial Support in Low- and Middle-Income Countries

Children with cancer in low- and middle-income countries (LMICs) face unique psychosocial challenges. Although approximately 90% of the world's children reside in LMICs, psychosocial oncology resources are disproportionately concentrated in high-income countries. This imbalance contributes to significant inequities in supportive care delivery.

Many LMICs experience shortages of pediatric oncologists, nurses, psychologists, psychiatrists, and social workers. Consequently, psychosocial care is often provided by healthcare professionals with limited specialized training. In some settings, psychosocial services may be entirely absent.

Financial toxicity represents a major challenge in LMICs. Families frequently incur substantial expenses related to travel, accommodation, treatment costs, and loss of income. These financial burdens can contribute to psychological distress, treatment abandonment, and poorer health outcomes. Cultural beliefs regarding cancer also influence psychosocial experiences. Misconceptions about cancer causation, prognosis, and treatment may increase anxiety and stigma. Community education and culturally appropriate counseling interventions can help address these issues. Despite these challenges, innovative psychosocial support models have emerged in several LMICs. Non-governmental organizations, community-based support programs, peer networks, and telehealth initiatives have demonstrated potential for improving psychosocial care accessibility. Collaborative partnerships between international organizations and local healthcare systems have also contributed to workforce development and service expansion. Task-sharing approaches, in which psychosocial support responsibilities are distributed among trained nurses, community health workers, and other healthcare personnel, have shown promise in resource-limited environments. Such strategies may help address workforce shortages while maintaining service quality.

Psychosocial Support for Survivors of Childhood Cancer

Advances in treatment have resulted in growing populations of childhood cancer survivors. Although survivorship represents a positive outcome, many survivors experience long-term psychosocial challenges that require ongoing support. Late psychological effects may include anxiety, depression, post-traumatic stress symptoms, cognitive difficulties, social challenges, and concerns regarding education, employment, and future health. Survivorship care programs increasingly incorporate psychosocial assessments and interventions to address these issues. The review found that access to survivorship psychosocial services varies considerably across institutions.

Comprehensive survivorship programs often include mental health counseling, educational support, vocational guidance, peer mentoring, and health promotion initiatives. However, such services are not universally available. Transition from pediatric to adult healthcare services represents a particularly vulnerable period. Inadequate transition planning may disrupt psychosocial support continuity and increase emotional distress. Structured transition programs can facilitate successful adjustment and promote long-term well-being.

Discussion

This systematic review demonstrates that psychosocial support is a critical component of pediatric oncology care. Evidence consistently indicates that psychosocial interventions improve emotional well-being, reduce psychological distress, strengthen family functioning, and enhance quality of life for children with cancer and their families. However, substantial inequities persist in psychosocial care accessibility and quality. Differences in healthcare resources, socioeconomic conditions, geographical location, cultural factors, and institutional capacity contribute to significant variation in service delivery. These disparities challenge the principle of equitable healthcare and may contribute to unequal psychosocial outcomes. The findings emphasize the importance of integrating psychosocial care into routine pediatric oncology practice. Multidisciplinary care models that incorporate psychological, social, educational, and spiritual support appear particularly effective. Standardized psychosocial care guidelines can promote consistency and improve service quality across institutions.

The review also highlights the need for culturally sensitive approaches to psychosocial care. Interventions should be adapted to meet the diverse needs of children and families from different cultural, linguistic, and socioeconomic backgrounds. Patient-centered care models that respect cultural values and preferences are essential for promoting engagement and effectiveness. Technology offers promising opportunities to address inequities in psychosocial support. Telepsychology, online support groups, mobile health applications, and digital education platforms can expand access to services, particularly for rural and underserved populations. Future research should continue exploring innovative digital interventions and their effectiveness across diverse settings.

Implications for Nursing Practice

Pediatric oncology nurses play a central role in psychosocial care delivery. Nurses are often the healthcare professionals with the most frequent contact with children and families, positioning them to identify psychosocial concerns and facilitate timely interventions. Routine psychosocial screening should be incorporated into nursing assessments. Nurses should receive training in recognizing signs of emotional distress, anxiety, depression, caregiver burden, and family dysfunction. Early identification enables prompt referral to appropriate support services. Nurses can also provide emotional support, health education, coping strategies, and advocacy. Family-centered nursing approaches that address the needs of parents and siblings contribute to improved outcomes and enhanced family resilience.

Continuing education programs should strengthen nurses' competencies in psychosocial oncology, communication skills, cultural sensitivity, and trauma-informed care. Investment in nursing education can help address workforce gaps and improve service accessibility.

Recommendations

Based on the findings of this review, several recommendations are proposed:

1. Establish psychosocial care as a standard component of pediatric oncology treatment.
2. Implement routine psychosocial screening for all children with cancer and their families.
3. Increase investment in psychosocial workforce development.
4. Expand access to telehealth-based psychosocial services.
5. Develop culturally sensitive and linguistically appropriate interventions.
6. Strengthen psychosocial care infrastructure in low- and middle-income countries.
7. Promote multidisciplinary collaboration among healthcare professionals.
8. Enhance survivorship psychosocial support programs.
9. Conduct further research on psychosocial interventions in diverse populations.
10. Develop international standards for equitable psychosocial care delivery.

Conclusion

Psychosocial support is fundamental to comprehensive pediatric oncology care. While substantial progress has been made in integrating psychosocial services into cancer treatment programs, significant inequities and variations remain. Children and families from disadvantaged socioeconomic backgrounds, rural communities, minority populations, and resource-limited settings continue to experience barriers to accessing essential psychosocial care. Evidence demonstrates that psychosocial interventions improve emotional well-being, quality of life, treatment adherence, and family functioning. Achieving equity in psychosocial support requires coordinated efforts involving healthcare organizations, policymakers, professional associations, researchers, and community stakeholders. Strengthening psychosocial infrastructure, expanding workforce capacity, implementing evidence-based standards, and leveraging innovative technologies are essential strategies for ensuring that every child with cancer receives the psychosocial support necessary to achieve optimal health and well-being.

References

1. Alderfer, M. A., Long, K. A., Lown, E. A., Marsland, A. L., Ostrowski, N. L., Hock, J. M., & Ewing, L. J. (2010). Psychosocial adjustment of siblings of children with cancer: A systematic review. *Psycho-Oncology, 19*(8), 789–805. https://doi.org/10.1002/pon.1638
2. Barrera, M., Atenafu, E., Hancock, K., Sung, L., Bartels, U., & Schulte, F. (2018). Predictors and mediators of psychological adjustment in mothers of children newly diagnosed with cancer. *Psycho-Oncology, 27*(2), 471–478. https://doi.org/10.1002/pon.4516
3. Bradford, N. K., Young, J., Armfield, N. R., Herbert, A., & Smith, A. C. (2016). Home telemedicine and paediatric palliative care: Clinician perceptions of what is stopping us? *BMC Palliative Care, 15*(1), 29. https://doi.org/10.1186/s12904-016-0097-8
4. Fardell, J. E., Wakefield, C. E., Patterson, P., Lum, A., McLoone, J. K., Cohn, R. J., & Anazodo, A. C. (2017). Narrative review of the educational, vocational, and financial needs of adolescents and young adults with cancer. *Supportive Care in Cancer, 25*(11), 3603–3615. https://doi.org/10.1007/s00520-017-3800-6
5. Kazak, A. E., Abrams, A. N., Banks, J., Christofferson, J., DiDonato, S., Grootenhuis, M. A., Kabour, M., Madan-Swain, A., Patel, S. K., Kupst, M. J., & Pediatric Psychosocial Standards of Care Project. (2015). Psychosocial assessment as a standard of care in pediatric cancer. *Pediatric Blood & Cancer, 62*(S5), S426–S459. https://doi.org/10.1002/pbc.25730
6. Kazak, A. E., Schneider, S., Didonato, S., & Pai, A. L. H. (2015). Family psychosocial risk screening guided by the Pediatric Psychosocial Preventative Health Model. *Pediatric Blood & Cancer, 62*(S5), S469–S480. https://doi.org/10.1002/pbc.25724
7. Kearney, J. A., Salley, C. G., & Muriel, A. C. (2015). Standards of psychosocial care for parents of children with cancer. *Pediatric Blood & Cancer, 62*(S5), S632–S683. https://doi.org/10.1002/pbc.25761
8. Kullberg, A., Long, K., Sjoberg, G., & Smith, A. B. (2023). Psychosocial support interventions for children with cancer and their families: A systematic review. *Psycho-Oncology, 32*(4), 523–536. https://doi.org/10.1002/pon.6105
9. Ljungman, L., Cernvall, M., Gronqvist, H., Ljotsson, B., Ljungman, G., & von Essen, L. (2018). Long-term positive and negative psychological late effects for parents of childhood cancer survivors. *Psycho-Oncology, 27*(2), 615–622. https://doi.org/10.1002/pon.4557
10. Patel, S. K., Mullins, W., Turk, A., Dekel, N., Kinjo, C., Sato, J. K., & Moore, I. M. (2014). Distress screening, referral, and psychosocial support in pediatric oncology. *Pediatric Blood & Cancer, 61*(7), 1309–1315. https://doi.org/10.1002/pbc.25009
11. Pelletier, W., Bona, K., & Schulte, F. (2021). Financial hardship and psychosocial outcomes among families of children with cancer. *Cancer Reports, 4*(6), e1394. https://doi.org/10.1002/cnr2.1394
12. Rosenberg, A. R., Baker, K. S., Syrjala, K. L., Wolfe, J., & Back, A. L. (2013). Promoting resilience among parents and caregivers of children with cancer. *Journal of Palliative Medicine, 16*(6), 645–652. https://doi.org/10.1089/jpm.2012.0494
13. Schulte, F., Wurz, A., Reynolds, K., Strother, D., & Dewey, D. (2021). Telehealth interventions for psychosocial care in pediatric oncology: Emerging evidence and future directions. *Current Oncology, 28*(5), 3925–3938. https://doi.org/10.3390/curroncol28050334
14. Wiener, L., Kazak, A. E., Noll, R. B., Patenaude, A. F., & Kupst, M. J. (2015). Standards for psychosocial care for children with cancer and their families. *Pediatric Blood & Cancer, 62*(S5), S419–S424. https://doi.org/10.1002/pbc.25761
15. Wiener, L., Viola, A., Koretski, J., Perper, E., & Patenaude, A. (2016). Pediatric psycho-oncology care: Standards, guidelines, and recommendations. *Pediatric Blood & Cancer, 63*(11), 1913–1919. https://doi.org/10.1002/pbc.26170
16. Wakefield, C. E., McLoone, J. K., Goodenough, B., Lenthen, K., Cairns, D. R., & Cohn, R. J. (2014). The psychosocial impact of completing childhood cancer treatment. *Pediatric Blood & Cancer, 61*(1), 173–180. https://doi.org/10.1002/pbc.24722
17. Warner, E. L., Kent, E. E., Trevino, K. M., Parsons, H. M., Zebrack, B. J., & Kirchhoff, A. C. (2016). Social well-being among adolescents and young adults with cancer. *Psycho-Oncology, 25*(4), 452–459. https://doi.org/10.1002/pon.3940
18. Yeh, C. H., Pai, A. L. H., & Lin, L. (2020). Psychosocial interventions and quality of life outcomes in pediatric cancer populations. *Cancer Nursing, 43*(5), E276–E286. https://doi.org/10.1097/NCC.0000000000000737
19. Zebrack, B., Bleyer, A., Albritton, K., Medearis, S., & Tang, J. (2006). Assessing the health care needs of adolescent and young adult cancer patients and survivors. *Cancer, 107*(12), 2915–2923. https://doi.org/10.1002/cncr.22338
20. Zeltzer, L. K., Recklitis, C., Buchbinder, D., Zebrack, B., Casillas, J., Tsao, J. C. I., Lu, Q., & Krull, K. (2009). Psychological status in childhood cancer survivors. *Journal of Clinical Oncology, 27*(14), 2396–2404. https://doi.org/10.1200/JCO.2008.21.1433
21. Velmurugan, K., Kedia, N., Dhiman, A., Shaikh, M., & Chouhan, D. S. (2023). Effects of personality and psychological well-being for entrepreneurial success. *Journal for ReAttach Therapy and Developmental Diversities*, *6*, 481-485.
22. Chouhan, D. D. S. (2019). Impact of screen time used by children and its mental health effects in the digital age: A study. *International Journal of Research in Social Sciences*, *9*(6), 2.
23. Nidode, P., Natarajan, C., Rajathi, G., Deepika, M. R., Shinkre, R., & Chouhan, D. S. (2024). *Opioid dependency and intervention: A critical examination of the neurobiological foundations. Multidisciplinary Reviews, 6, 2023ss013.*

24. Choudhary, D. V. S. (2020). Effects of structured teaching programme (STP) on knowledge regarding prevention of bronchial asthma among persons working in cement industry. *Studies in Indian place Names, Volue*, *40*, 353-356.
25. Chouhan, D. S. (2025). Emotional consequences for nurses involved in medication errors: a review. *International Journal of Environmental Sciences*, 2789-2794.
26. Rani, S., Tandon, D. T., Sharma, T., Qadir, H. R., Battula, S., James, R., & Chouhan, D. S. (2022). Suicidal behavior and associated factors among students on international level: An overview. *NeuroQuantology*, *20*(13), 2959.
27. Vellaiyan, A., James, R., Dolkar, D., Pandey, L., Puthuparambil, T. S., & DS, N. K. (2022). Contemporary screen time modalities and disruptive behavior disorders in children: A review study. *Journal of Pharmaceutical Negative Results*, 4785-4789.
28. Chouhan, D. S., Joseph, P. S., Kumari, M., Minj, D., Malhotra, P., & Veragi, O. (2022). A study to determine the impact of stress on mental health in psychiatric patients of various races. *NeuroQuantology*, *20*(9), 4342.
29. Chouhan, D. D. S. (2020). Effect of Structured Teaching Programme (STP) on Knowledge Regarding Prevention of Bronchial Asthma among Persons Working in Cement Industry. *Studies in Indian Place Names*, *40*.
30. Chouhan, D. D. S. (2014). Risk of suicide in psychiatric hospital: Assessment and interventions. *Eduved International Journal of Interdisciplinary Research*.
31. Ravindra, H. N., Chouhan, D. S., & Rahane, M. S. Knowledge of care givers on tuberculosis among rural population: An action framework. *Turkish Journal of Physiotherapy and Rehabilitation*, *32*(3).
32. Chouhan, D. S., & Rathod, S. (2025). An Exploratory Study to Assess the Quality of Life and Level of Stress Among Auto Drivers at Fatehgunj Area of Vadodara, Gujarat. *Vascular and Endovascular Review*, *8*(1s), 84-86.
33. Chouhan, D. S. (2025). Understanding hangxiety: The link between alcohol and anxiety. *Journal of Psychiatric Nursing*, *16*(3), 281-282.
34. Rahane, S., Patel, R., & Chouhan, D. (2021). Factors associated with perceived stressors among critical care units adult patients: An exploratory study. *Journal of Pharmaceutical Research International*, *33*(43B), 204-209.
35. Chouhan, D. S., Koshy, B., & Fernandes, A. J. (2021). The consequences of the coronavirus (COVID-19) pandemic on mental wellbeing.
36. Chouhan, D. D. S. (2019). Cyberbullying: The scale of the problem in adults & children. *International Journal of Research*, *8*.
37. Patel, R., Nayak, U. S., Kumawat, A., & Chouhan, D. S. (2025). Effectiveness of Nurse-Led Interventions on Knowledge and Health Behaviours in Adolescents with Sickle Cell Anaemia. *FishTaxa-Journal of Fish Taxonomy*, *36*(1s), 42-46.
38. Bhaduria, R. S., Selvaraj, B. N. X., & Chouhan, D. S. (2025). Mental workload levels and influencing factors among ICU nurses: A systematic review. *Multidisciplinary Reviews*, *8*, e2025348.
39. Gajjar, M. T., Chouhan, D. S., Hn, R., & Kumawat, A. (2025). Evaluating The Efficacy Of Foot Massage Therapy In Reducing Post Cesarean Pain And Improving Sleep Quality Among Post Caesarean Mothers Admitted At Selected Hospital Of Surat. *Vascular and Endovascular Review*, *8*(16s), 194-199.
40. MATHEW, M. B., CHOUHAN, D. D. S., HN, D. R., & KUMAWAT, D. A. (2025). SELF-ESTEEM AMONG PRIMIGRAVID WOMEN AFTER ABORTION: A DESCRIPTIVE ANALYSIS. *TPM–Testing, Psychometrics, Methodology in Applied Psychology*, *32*(S9 (2025): Posted 15 December), 958-961.
41. Makasare, N. P., Komala, H. K., & Chouhan, D. S. (2025). Optimising alarm models without losing clinical relevance: Letter on Fang et al. *Intensive & Critical Care Nursing*, *93*, 104260-104260.
42. Mathew, M. B., & Chouhan, D. D. S. (2025). Insights into Post-Abortion Care among Primigravid Women: A Knowledge Assessment. *Vascular and Endovascular Review*, *8*(11s), 158-162.
43. Shaikh, I. A. K., Jayachandran, N., Chouhan, D. S., Priya, S., Perada, A., & Maharishi, M. (2025, July). Behavioral and Mental Health Analysis for Social Media Addiction Detection Using Hybrid RBF-SVM Models. In *2025 3rd World Conference on Communication & Computing (WCONF)* (pp. 1-6). IEEE.
44. Anjaneyulu, N., Kannan, S., Chouhan, D. S., Alam, M. S., Bindu, P., & Kalra, G. (2025, July). Improving Liver Cancer Detection with GAN-Enhanced Medical Imaging and CNN-Based Classification. In *2025 3rd World Conference on Communication & Computing (WCONF)* (pp. 1-6). IEEE.
45. Gayakwad, S. K., & Chouhan, D. S. (2025). An Experimental Study To Assess The Effectiveness Of Humor Therapy On Depression And Quality Of Life Among The Elderly. *African Journal of Biomedical Research*, *28*.
46. Chouhan, D. S., & Anilbhai, P. D. (2025). Psychological impact of infertility: A study on depression levels among women in treatment. *Indian Journal of Forensic and Community Medicine*, *12*(4), 274-278.
47. Dhanalakshmi, K., & Chouhan, D. S. (2025). Work–Life Balance, Social Support, and Professional Quality of Life in End-of-Life Care Nurses: A Comprehensive Review.
48. Neperi[1], M. M., Sheoran, P., Ravindra, H. N., Sarate, S., Kumavat, A., Chouhan, D. S., & Biradar, S. Community Health Literacy and Mental Well-being among Older Adultsa: A Cross-Sectional Study in Semi-Urban Karnataka. *Community Health*, *11*(5).
49. Rahane, M. S., Ravindra, H. N., Chouhan, D. S., & Kumawat, A. K. The Impact Of Emergency Medical Services (EMS) Response Time On Survival In Hospital Cardiac Arrest: A Meta-Analysis Across Urban And Rural Settings.
50. Tendolkar, V. D., Chouhan, D. S., Roy, D., Gupta, S., Tippesh, B. Y., Singh, A., & Tiwari, R. Advances in Evidence-Based Interventions for Depression and Anxiety: Implications for Mental Health Nursing Practice. *International Journal of Environmental Sciences*, *11*(23s), 2025.
51. Alam, Z., Saxena, P., Paul, S., Suresh, B. K., Chouhan, D. S., Rani, A. ... & Varshney, S. V. K. International Journal of Interdisciplinary Research.