

Improvement of Patient Stratification in Palliative Care

Sarah Ziane*

Department of Pain Management and Palliative Care, Queensland School of Medicine, Australia

Abstract

An essential component of computer science research, artificial intelligence model building for synthetic data creation to enhance Machine Learning (ML) methodology is presently being used to allied medical domains, such as Systems Medicine and Medical Informatics. For more than ten years, medical researchers have been motivated by the notion of individualized decision-making assistance based on patient data, but there are still significant constraints due to the overall unavailability and sparsity of data. Contrast this with the technology that is now being used, which enables us to create and analyse patient data in a variety of formats, including tabular data on health records, medical photographs, genetic data, and even audio and video. The creation of synthetic tabular data based on real-world data is one way to get around these data constraints in respect to medical records. Consequently, with more pertinent patient data available, ML-assisted decision-support may be understood more easily. A number of cutting-edge ML algorithms create and draw choices from such data, from a methodological perspective. However, there are still significant problems that prevent a widespread practical application in actual clinical situations. As a challenging primary example of highly customised, hardly available patient information, we will provide for the first time insights into current viewpoints and prospective consequences of adopting synthetic data creation in palliative care screening in this study. Together, the reader will discover some basic ideas and workable solutions that are pertinent to creating and utilising synthetic data for ML-based screens in palliative care and other fields.

Introduction

The nature and degree of psychological and physical symptoms fluctuate in advanced, incurable cancer patients. Both the patient and the unofficial carers must also deal with societal responsibilities. According to the World Health Organization's (WHO) definition of palliative care [1] "Palliative care (PC) uses a team-oriented approach to improve the quality of life of patients and their families who are dealing with problems related to a life-threatening illness." Through the early detection, accurate evaluation, and treatment of pain and other issues, whether they are physical, psychological, or spiritual, it avoids and alleviates suffering. In order to assist patients live as actively as possible until death, it provides a support system [1]. Furthermore, PC respects patients' rights to adequate, culturally appropriate, and individually relevant information about their health state in order to make their own treatment decisions [2]. Palliative care is appropriate at all health care levels (primary to tertiary care) and settings (place of residence and institutions) [3]. General practitioners, oncologists, outpatient facilities, and hospitals all provide primary care [4,5]. Secondary palliative care, which is provided to all patients with a symptomatic advanced, progressing life-threatening illness and a lack of effective treatment choices, entails palliative-care professionals serving as consultants [6]. Additionally, this collective is referred to in most guidelines [3]. A highly specialized field focused on providing supportive care to patients with life-limiting diseases across the disease trajectory, PC has developed over the past 50 years from treating patients at the end of life [4]. The timing of palliative treatment in the course of an illness is still seen differently, including the challenge of a trustworthy and timely screening [7].

To the best of our knowledge, there is no existing evaluation in the literature that combines the concepts of synthetic data creation and its possible use towards the screening of PC demands. In order to raise general awareness and start a conversation about such cutting-edge PC or related disciplines in personalised medicine, we give an introduction into both fields here for an initial conjunction and motivation for using this quickly evolving computational field within an important medical domain.

Patients in need for palliative care

Typically, there are two screening methods that might result in a recommendation for palliative care: one is based on the patient's prognosis, and the other is solely concerned with PC needs. Focusing on prognosis is justified since, for most patients with advanced cancer symptoms and other conditions, palliative care has to be increased in the final two months of life. Poor general health, weight loss, clinical symptoms (such as anorexia, breathlessness, or confusion), and abnormal laboratory results (such as a high white cell count, lymphopenia, hyperalbuminemia, elevated lactate dehydrogenase, or C-reactive protein and Vitamin B12 levels) are the main indicators of this final phase. Scores evaluating physical impairments and patient mortality based on comorbidities or the frequency of symptoms, as well as other individual criteria, can also be used to determine the prognosis. A thorough analysis of research that used prognostic tools for identification revealed that, across eight investigations, the accuracy of primarily five methods was assessed. Sensitivity ranged from 3% to 94%, while specificity ranged from 26% to 99%, respectively. The authors draw the conclusion that existing screening techniques have a limited capacity for identifying patients with severe progressive illnesses who are likely to require palliative care. The Patient Reported Outcome Measurement (PROM) is the current gold standard for determining the requirements of patients. Currently, a number of tools, such as MIDOS, ESAS, and IPOS, as well as the Distress

*Corresponding author: Sarah Ziane, Department of Pain Management and Palliative Care, Queensland School of Medicine, Australia, E-mail: sarah_5243@yahoo.com

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Thermometer (DT), are advised for use in symptom evaluation. Ten questions concerning uncomfortable physical symptoms, as well as questions about anxiety and sadness, are part of the Minimal Documentation System for Patients in Palliative Care (MIDOS). The Edmonton Symptom Assessment System (ESAS) asks about mood and general well-being in addition to eight physically upsetting symptoms. Patients can rate their psychological anguish on a scale of zero to 10 using the distress thermometer. Physical symptoms and those from the psychosocial category are combined on the Integrated Palliative Care Outcome Scale (IPOS). According to a recent study by integrating the results from these PROMs into AI-based Clinical Decision Support Systems (CDSS) may significantly aid in identifying PC requirements. Numerous studies have been done to date to evaluate screening systems that include prognostic factors (such as diagnosis, functional status, complications, and comorbidities) with symptoms and requirements (such as symptom management, distress, and support from family).

Conclusion

Palliative care has changed from providing care to patients just at the very end of their lives to being a highly specialised field dedicated to providing supportive care to patients with life-limiting illnesses at every stage of their illness. For a proper and timely screening, which is a time-consuming and domain-expertise-driven procedure that is challenging to perform in clinical practise at all times, this very individual track requires specific attention and awareness. To enhance the referral of patients with unmet palliative care needs, a physician-independent automated screening supporting the physician's evaluation would be necessary. Although current AI solutions currently offer a useful toolkit,

they are still restricted in terms of data accessibility and, consequently, a broad range of clinical application.

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Conflicts of Interest

The authors declare no conflict of interest.

References

1. Radbruch L, De Lima L, Knaut F, Wenk R, Ali Z, et al. (2020) Redefining Palliative Care-A New Consensus-Based Definition. *J Pain Symptom Manag* 60: 754-764.
2. Lopes IM, Guarda T, Oliveira P (2020) General Data Protection Regulation in Health Clinics. *J Med Syst* 44: 1-9.
3. Kamal AH, Bausewein C, Casarett DJ, Currow DC, Dudgeon DJ, et al. (2020) Standards, Guidelines, and Quality Measures for Successful Specialty Palliative Care Integration into Oncology: Current Approaches and Future Directions. *J Clin Oncol* 38: 987-994.
4. Hui D, Bruera E (2016) Integrating palliative care into the trajectory of cancer care. *Nat Rev Clin Oncol* 13: 159-171.
5. Rangachari D, Smith TJ, Kimmell S (2013) Integrating Palliative Care in Oncology: The Oncologist as a Primary Palliative Care Provider. *Cancer J* 19: 373.
6. Schenker Y, Arnold R (2015) The Next Era of Palliative Care. *JAMA* 314: 1565.
7. Schenker Y, Crowley-Matoka M, Dohan D, Rabow MW, Smith CB, et al. (2014) Oncologist Factors That Influence Referrals to Subspecialty Palliative Care Clinics. *J Oncol Pract* 10: e37.