Here are 10 additional papers and studies that delve into the use of predictive analytics and machine learning in healthcare, similar to the ones you listed:

1. \*\*Healthcare Predictive Analytics Using Machine Learning and Deep Learning Techniques\*\*: This survey provides a comprehensive overview of the use of machine learning and deep learning techniques in healthcare predictive analytics. It discusses various models such as logistic regression, decision trees, and random forests, highlighting their applications, benefits, and limitations【5†source】.

2. \*\*Multimodal Machine Learning in Precision Health\*\*: A scoping review that explores how machine learning, particularly through multimodal data integration (combining data from multiple sources and types), can enhance precision health. This includes predicting disease outcomes and improving diagnostic processes in conditions like ADHD, cancer, and stroke【6†source】.

3. \*\*Machine Learning Classification of ADHD and HC by Multimodal Serotonergic Data\*\*: A study focusing on the classification of ADHD using machine learning techniques on serotonergic data, showcasing the potential of machine learning in diagnosing and understanding neurological conditions【6†source】.

4. \*\*Radiogenomic Analysis of Hypoxia Pathway Predictive of Overall Survival in Glioblastoma\*\*: This research demonstrates how machine learning can be used in radiogenomics to predict survival outcomes in glioblastoma patients, highlighting the potential for machine learning in oncology【6†source】.

5. \*\*Combining Multimodal Imaging and Treatment Features Improves Machine Learning-based Prognostic Assessment in Patients with Glioblastoma Multiforme\*\*: A study that illustrates the power of integrating multiple types of data to improve prognostic assessments in cancer treatment【6†source】.

6. \*\*Machine Learning Reveals Multimodal MRI Patterns Predictive of Isocitrate Dehydrogenase and 1p/19q Status in Diffuse Low- and High-Grade Gliomas\*\*: This paper discusses how machine learning applied to MRI patterns can aid in predicting molecular characteristics of gliomas, which is crucial for treatment planning【6†source】.

7. \*\*Predicting Acute Kidney Injury in Cancer Patients Using Heterogeneous and Irregular Data\*\*: This study shows how machine learning can predict acute kidney injury in cancer patients by analyzing complex and varied data types, demonstrating the flexibility of machine learning applications in healthcare【6†source】.

8. \*\*Ensemble-based Regression Analysis of Multimodal Medical Data for Osteopenia Diagnosis\*\*: Highlights the use of ensemble-based machine learning methods for diagnosing osteopenia, showcasing the importance of combining different data sources for accurate health predictions【6†source】.

9. \*\*Defining a Multimodal Signature of Remote Sports Concussions\*\*: Examines the use of machine learning to identify biomarkers for sports-related concussions, indicating the potential for predictive analytics in neurology and sports medicine【6†source】.

10. \*\*Multimodal Predictive Modeling of Endovascular Treatment Outcome for Acute Ischemic Stroke Using Machine-learning\*\*: Discusses how machine learning models, by integrating various data types, can predict the outcomes of endovascular treatments in stroke patients, offering insights into personalized treatment planning【6†source】.

These papers and studies provide a glimpse into the diverse applications of machine learning and predictive analytics in healthcare, ranging from diagnostic and prognostic assessments in oncology and neurology to the prediction of treatment outcomes and the management of chronic diseases.

**1. Healthcare Predictive Analytics Using Machine Learning and Deep Learning Techniques**

**Problem Statement**

The healthcare industry is inundated with massive amounts of data, presenting both a challenge and an opportunity to improve patient care. The article explores the potential of machine learning (ML) and deep learning (DL) techniques to harness this data, aiming to revolutionize healthcare predictive analytics. It addresses the need for innovative approaches to analyze complex datasets, predict patient outcomes, and enhance decision-making processes in clinical settings.

**Contribution**

This article significantly contributes to the field by presenting a thorough overview of the current applications and future directions of ML and DL in healthcare predictive analytics. It highlights the potential of these technologies to improve diagnostic accuracy, personalize treatment plans, and optimize healthcare operations. Furthermore, it discusses the challenges and ethical considerations of implementing AI in healthcare, thus providing a balanced view of the opportunities and obstacles in this evolving field.

**Methodology**

The methodology involves a systematic review of the indexed literature from major databases, likely including PubMed/Medline, Scopus, and EMBASE, similar to practices in comprehensive reviews. It focuses on studies that have applied ML and DL techniques in various aspects of healthcare, from diagnosis and prognosis to treatment and patient monitoring. The review process probably includes criteria for inclusion and exclusion, ensuring that the analysis covers significant and relevant studies in the domain.

**Dataset and Link**

While the article does not explicitly mention specific datasets, it bases its findings on a broad analysis of existing literature that likely includes studies utilizing publicly available healthcare datasets or proprietary data from clinical studies. The review's nature suggests that it synthesizes information from a wide range of sources, each with its datasets, rather than relying on a single dataset for analysis.

**Evaluation Metrics**

The article likely discusses various metrics to evaluate the effectiveness of ML and DL applications in healthcare, though specific metrics are not detailed in the summary. These could include accuracy, sensitivity, specificity, precision, recall, F1 score, and area under the receiver operating characteristic curve (AUC-ROC), among others. These metrics are essential for assessing the performance of predictive models in correctly identifying health outcomes and their applicability in clinical practice

**2.Multimodal Machine Learning in Precision Health**

* **Problem Statement:** Challenges in integrating diverse health data sources to improve personalized medicine outcomes.
* **Contribution:** Demonstrates the potential of multimodal machine learning to enhance precision health by accurately predicting and treating diseases based on integrated datasets.
* **Methodology:** Review of studies applying multimodal machine learning techniques across various health datasets.
* **Dataset and Link:** Not specified; likely draws from publicly available datasets or references studies that do.
* **Evaluation Metrics:** Likely includes accuracy, precision, recall, F1 score, and specific health outcome measures.

**3. Machine Learning Classification of ADHD and HC by Multimodal Serotonergic Data**

* **Problem Statement:** Investigating the capability of machine learning to distinguish between ADHD patients and healthy controls using serotonergic system data.
* **Contribution:** Introduces a novel approach using machine learning on serotonergic data for ADHD classification, offering potential for better diagnostic tools.
* **Methodology:** Applies machine learning algorithms to multimodal serotonergic data, including imaging and genetic information.
* **Dataset and Link:** Not specified; study likely involves clinical or research datasets focusing on serotonergic markers.
* **Evaluation Metrics:** Accuracy, sensitivity, specificity, and possibly other performance measures relevant to classification tasks.

**4.Radiogenomic Analysis of Hypoxia Pathway Predictive of Overall Survival in Glioblastoma:**

* **Problem Statement:** Examining how radiogenomic analysis of the hypoxia pathway can predict overall survival in glioblastoma patients.
* **Contribution:** Provides insights into the correlation between imaging biomarkers and genetic hypoxia pathways, enhancing prognosis accuracy for glioblastoma.
* **Methodology:** Utilizes radiogenomic techniques to link MRI features with hypoxia-related genetic expressions.
* **Dataset and Link:** Not detailed; likely uses glioblastoma patient data from clinical studies or databases.
* **Evaluation Metrics:** Survival analysis metrics, possibly including hazard ratios, Kaplan-Meier estimates, and Cox proportional hazards modeling

**5. Combining Multimodal Imaging and Treatment Features Improves Machine Learning-based Prognostic Assessment in Patients with Glioblastoma Multiforme:**

* **Problem Statement:** Illustrates the power of integrating multiple types of data to enhance prognostic assessments in cancer treatment.
* **Contribution:** Enhances prognostic assessment in patients with glioblastoma multiforme by combining multimodal imaging and treatment features.
* **Methodology:** Utilizes machine learning to integrate imaging and treatment data for improved prognostic assessment.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.

**6. Machine Learning Reveals Multimodal MRI Patterns Predictive of Isocitrate Dehydrogenase and 1p/19q Status in Diffuse Low- and High-Grade Gliomas:**

* **Problem Statement:** Discusses how machine learning applied to MRI patterns can predict molecular characteristics of gliomas.
* **Contribution:** Aids in predicting molecular characteristics crucial for treatment planning in diffuse low- and high-grade gliomas.
* **Methodology:** Applies machine learning to MRI patterns to predict molecular characteristics of gliomas.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.

**7. Predicting Acute Kidney Injury in Cancer Patients Using Heterogeneous and Irregular Data:**

* **Problem Statement:** Demonstrates how machine learning can predict acute kidney injury in cancer patients by analyzing complex and varied data types.
* **Contribution:** Shows the flexibility of machine learning applications in healthcare for predicting acute kidney injury in cancer patients.
* **Methodology:** Utilizes machine learning to analyze heterogeneous and irregular data for predicting acute kidney injury.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.

**8. Ensemble-based Regression Analysis of Multimodal Medical Data for Osteopenia Diagnosis:**

* **Problem Statement:** Highlights the use of ensemble-based machine learning methods for diagnosing osteopenia.
* **Contribution:** Showcases the importance of combining different data sources for accurate health predictions in osteopenia diagnosis.
* **Methodology:** Utilizes ensemble-based regression analysis of multimodal medical data for diagnosing osteopenia.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.

**9. Defining a Multimodal Signature of Remote Sports Concussions:**

* **Problem Statement:** Examines the use of machine learning to identify biomarkers for sports-related concussions.
* **Contribution:** Identifies a multimodal signature for remote sports concussions, indicating potential for predictive analytics in neurology and sports medicine.
* **Methodology:** Utilizes machine learning to define a multimodal signature for remote sports concussions.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.

**10. Multimodal Predictive Modeling of Endovascular Treatment Outcome for Acute Ischemic Stroke Using Machine-learning:**

* **Problem Statement:** Discusses how machine learning models can predict the outcomes of endovascular treatments in stroke patients.
* **Contribution:** Offers insights into personalized treatment planning by predicting endovascular treatment outcomes for acute ischemic stroke patients.
* **Methodology:** Utilizes machine learning to predict endovascular treatment outcomes for acute ischemic stroke patients.
* **Dataset Availability:** Not specified in the provided information.
* **Evaluation Matrices:** Not specified in the provided information.