



# 11. BÖLÜM

## BEYİN VE SİNİR CERRAHİSİNDE YAPAY ZEKÂ UYGULAMALARI

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### GİRİŞ

Tıpta ve sağlık hizmetlerinde uygulamalar için yapay zekâ (Artificial Intelligence-AI) umudu, kavramın ilk olarak 1960'ların sonlarında geliştirildiği zaman olduğu kadar bugün de yaygın olarak konuşulmaktadır (1). Dünya çapında sağlık sisteminin dijitalleşmesi eğiliminin bir sonucu olarak, sadece 2020 yılında üretilen sağlık verisinin 2314 Exabyte'a kadar ulaşacağı tahmin edilmektedir. Gelişen akıllı sistemler ve toplanan bu veriler ile daha iyi sonuçlar çıkarılması ve verinin daha verimli kullanılması amaçlanmaktadır. Veriler geriye dönük olarak yorumlanabildiği gibi güncel teknolojiler ile ileriye yönelik tahmin ve tanıda da son derece önemlidir. Son dönemde yapılan bilimsel çalışmalar incelendiğinde yapay zekâ teknolojilerinin birçok tıp alanında uygulandığı görülmektedir (2).

### YAPAY ZEKA UYGULAMALARI

Yapay zekâ, bilgisayarlarda akıllı davranışın simülasyonu ile ilgilenen bilgisayar bilimi dalıdır. Yapay zekâ sistemleri, alınan verilerin doğru bir şekilde yorumlanmasını, bu verilerden öğrenmeyi ve öğrendiklerini belirli bir hedef veya görev üzerinde kullanabilmeyi sağlayan akıllı sistemlerdir (2). Makine öğrenmesi (Machine Learning-ML), bilgisayar algoritmalarının, açık bir şekilde programlanmadan geniş veri kümelerini doğrudan inceleyerek girdi ve çıktı verileri arasındaki ilişkiyi öğrendiği yapay zekânın bir alt disiplini ve ana bileşenidir (2,3). Makine öğrenmesi aracılığıyla yapay zekâ, tıp dünyasına artan

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önemlisi, ML modelleri analizi çok yüksek doğrulukla gerçekleştirebilse bile, klinisyenler yine de herhangi bir analizin sonuçlarını ve aktif klinik senaryoya uygunluğunu göz önünde bulundurmalıdır (3,28).

Teknolojinin hayatımıza bu denli girdiği bir dönemde yapay zekâ modaliteleri, yetişmiş sağlık personellerinin arasındaki farklılıkları en aza indirerek insanların, nitelikli sağlık hizmetine hızlı ve güvenli bir şekilde ulaşmasına olanak sağlayacaktır.

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