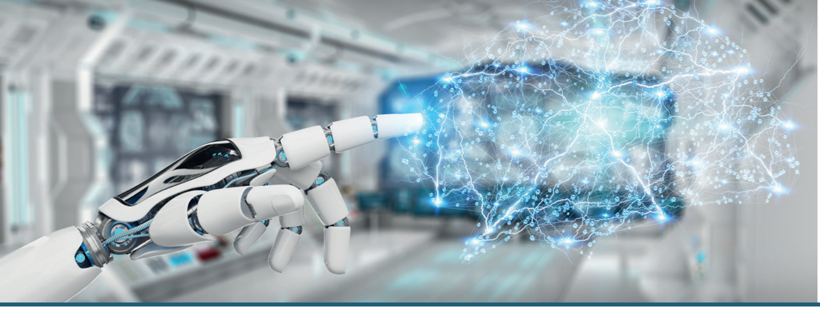

20. BÖLÜM

DİKKAT EKSİKLİĞİ HİPERAKTİVİTE BOZUKLUĞU VE YAPAY ZEKA

Günay BUDAGOVA [1]

GİRİŞ

Dikkat eksikliği hiperaktivite bozukluğu (DEHB), çocukluk çağının en sık rastlanılan ruhsal bozukluklarından birisidir. Dikkat dağınıklığı, aşırı aktivite veya zayıf öz-denetim (self-control) başlıca semptomlarıdır (1). Amerikan Psikiyatri Birliği (APA), DEHB'yi dikkat eksikliğinin ön planda olduğu tip, hiperaktivite-impulsivitenin ön planda olduğu tip ve kombine tip olmak üzere üç alt gruba ayırmıştır (2). DEHB'nin etiyopatogenezi heterojen olup, genetik, çevresel ve nöronal etkenler rol oynamaktadır.

APA'nın DSM el kitabında DEHB ile ilgili teşhisin duyarlılığı %70-%90 arasındadır. Klinik uygulamadaki teşhisler klinisyenin gözlemlerine ve semptom anketlerine dayanmaktadır. DEHB'yi sınıflandırmak ve teşhis etmek için daha nicel ve objektif analizlerin geliştirilmesi, nörobilim araştırmalarının önemli bir hedefidir. Bu amaçla farklı verilerden faydalanılarak makine öğrenmesi tabanlı, yapay zekaya dayanan yöntemler geliştirilmektedir.

Kitabımızın bu bölümünde DEHB ve Yapay Zeka ile ilgili genel bilgilerin ardından, DEHB'nin sınıflandırılması ve teşhisinde Yapay Zeka'nın rölünü araştıran çalışmalara yer verilmiştir.

DEHB TANIMI

Dikkat Eksikliği Hiperaktivite Bozukluğu (DEHB), çocukluk çağında başlayan, kişinin yaşına ve gelişim düzeyine uygun olmayan dikkatsizlik, hiperak-

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Yapay Zeka yaklaşımlarıyla DEHB teşhisini araştıran diğer çalışmalara örnek olarak; DEHB hastalarının madde bağımlılığına yakalanma olasılığının kestirimi konusunda çalışılarak, yinelemeli bir derin öğrenme sinir ağı türü olan uzun-kısa süreli bellek (LSTM) kullanılmış ve beynin kaudat nukleus adı verilen kısmının MR görüntülerinin bölütlenmesi temeline dayanan bir method ile analiz edilmiştir (62, 63); kişilerin davranışlarının renk ve derinlik bilgisi içeren görselleri kullanılarak DEHB'nin teşhisi konulmaya çalışılmıştır (64); DEHB-200 veri seti kullanılarak, öznitelik seçme algoritmaları ile uygun öznitelikler belirlenmiş ve daha sonra Destek Vektör Makinaları ile sınıflandırma yapılmıştır (65); DEHB'nin Obstrüktif uyku apnesinden ayırt edilmesine yönelik farklı makine öğrenme algoritmalarından faydalanılmıştır (66). Ortaya konan makine öğrenmesi tabanlı tüm bu yöntemlerde %70-%90 aralığında başarımlar elde edilmiştir.

SONUÇ

Yapay Zeka yöntemleriyle DEHB teşhisinin konulması daha objektif, daha kısa zaman diliminde gerçekleşmekte ve daha az yorucu olmaktadır. Bu yaklaşımlar yalnızca zamandan, insan gücünden ve diğer kaynaklardan tasarruf sağlamakla kalmayıp, aynı zamanda olası insan önyargısını da önlemektedir. Bu konuda daha fazla çalışmaların yapılmasına ihtiyaç vardır.

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