

OBEZİTENİN GELECEĞİ: NÖROPSİKOLOJİ PERSPEKTİFİNDEN 'OBEZİTE'

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37. BÖLÜM

Obezite, çağımızın küresel halk sağlığı sorunları arasında yer almaktadır (1). Dünya genelinde ciddi bir sağlık sorunu olan obezite; sağlık, ekonomik ve sosyal yönden işlevselliği olumsuz yönde etkilemektedir (1, 2). Yüksek kalorili ve enerji yoğunluklu gıda çeşitleri gün geçtikçe artmakta; teknolojinin gelişmesine paralel olarak da insanlar daha az enerji harcamaktadır (3, 4). Ayrıca kitle iletişim araçları, erişimi kolay olan enerji yoğunluklu gıdaların tüketimini tetiklenmektedir (5). Bu haliyle günümüz çağı 'obezojenik' olarak adlandırılmaktadır (6). Obezojenik çevre koşulları yeme davranışını tetikleyip pekiştirse de bazı bireyler bu tetikleyici ve cezbedici koşullarla baş ederken bazıları bu duruma karşı koyamamaktadır (3, 7). Tetiklenmeye karşı direnç gösterebilmenin gerektiği bu çevresel koşullarda, bilişsel kontrolün yadsınamaz bir rolü bulunmaktadır. Yeme davranışı sadece fizyolojik durumlardan ya da fiziksel çevre koşullarından etkilenmemektedir. Bilişsel süreçlerin yeme davranışı üzerine etkisi kaçınılmazdır (3, 8). Nitekim obezite sorunu olan bireylerin bilişsel işlevlerinin görece olarak zayıfladığına yönelik pek çok kanıt bulunmaktadır (9, 10, 11). Bunun yanı sıra son dönemlerde bilişsel işlevlere ilişkin egzersizlerin (cognitive training) yeme davranışı ve kilo verme üzerinde etkisi olduğu da gösterilmiştir (12). Dolayısıyla önümüzdeki dönemlerde gerek obezitenin önlenmesinde gerekse obezite sorunu olan bireylere yönelik müdahalelerde, algı gibi bilişsel süreçlerin rolünün kavranması ve nöropsikolojik müdahale programlarının geliştirilmesi ve uygulanması kritik bir rol oynayacaktır.

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Kaynaklar

1. Aronne LJ. Epidemiology, morbidity, and treatment of overweight and obesity. *J Clin Psychiatry*. 2001;62(23): 13-22.
2. Björntorp P, editor. *International Textbook of Obesity*. New York: John Wiley and Sons; 2001.
3. Berthoud HR. Interactions between the “cognitive” and “metabolic” brain in the control of food intake. *Physiol. Behav*. 2007;91:486-498.
4. Hill JO, Peters JC. Environmental contributions to the obesity epidemic. *Science*. 1998;280:1371-1374.
5. Hoek J, Gendall P. Advertising and obesity: a behavioral perspective. *J. Health Commun*. 2006;11:409-422.
6. Berthoud HR. Multiple neural systems controlling food intake and body weight. *Neurosci Biobehav Rev*. 2002; 26:393-428.
7. Jasinska AJ, Yasuda M, Burant CF, Gregor N, Khatri S, Sweet M. et al. Impulsivity and inhibitory control deficits are associated with unhealthy eating in young adults. *Appetite*. 2012;59:738-747.
8. Zheng H, Berthoud HR. Eating for pleasure or calories. *Curr Opin Pharmacol*. 2007;7(6):607-612.
9. Batterink L, Yokum S, Stice E. Body mass correlates inversely with inhibitory control in response to food among adolescent girls: an fMRI study. *Neuroimage*. 2010; 52(4):1696–1703.
10. Boeka AG, Lokken KL. Neuropsychological performance of a clinical sample of extremely obese individuals. *Arch Clin Neuropsychol*. 2008;23:467-474.
11. Gerdan G, Kurt M. Response inhibition according to the stimulus and food type in exogenous obesity. *Appetite*. 2020;150:104651.
12. Yang Y, Shields GS, Wu Q, Liu Y, Chen H, Guo C. Cognitive training on eating behaviour and weight loss: A meta-analysis and systematic review. *Obes Rev*. 2019;20(11):1628-1641.
13. Appelhans BM. Neurobehavioral inhibition of reward-driven feeding: implications for dieting and obesity. *Obesity*. 2009;17:640–647.
14. Berthoud HR, Morrison C. The Brain, appetite and obesity. *Annu. Rev. Psychol*. 2008;59:55-92.
15. Reinert KRS, Po'e EK, Barkin SL. The Relationship between Executive Function and Obesity in Children and Adolescents: A Systematic Literature Review. *J. Obes*. 2013; 820956.
16. Castellanos EH, Charboneau E, Dietrich MS, Park S, Bradley BP, Mogg K. et al. Obese adults have visual attention bias for food cue images: evidence for altered reward system function. *Int J Obes*. 2009;33:1063-1073.
17. Nijs IM, Muris P, Euser AS, Franken IH. Differences in attention to food and food intake between overweight/obese and normal-weight females under conditions of hunger and satiety. *Appetite*. 2010;54(2):243-254.
18. Strack F, Deutsch R. Reflective and impulsive determinants of social behavior. *Pers. Soc. Psychol. Rev*. 2004;8(3): 220-247.
19. Miyake A, Emerson MJ, Freidman NP. Assessment of executive functions in clinical settings: Problems and recommendations. *Semin Speech Lang*. 2000;21:169-183.
20. Diamond A. Executive functions. *Annu. Rev. Psychol*. 2013;64:135-168.

21. Cohen JI, Yates KF, Duong M, Convit A. Obesity, orbitofrontal structure and function are associated with food choice: a cross-sectional study. *BMJ Open*. 2011;1:e000175.
22. Le DS, Pannacciulli N, Chen K, Del Parigi A, Salbe AD, Reiman EM et al. (2007). Less activation of the left dorsolateral prefrontal cortex in response to a meal: a feature of obesity. *Am. J. Clin. Nutr.* 84, 725-731.
23. Maayan L, Hoogendoorn C, Sweat V, Convit A. Disinhibited eating in obese adolescents is associated with orbitofrontal volume reductions and executive dysfunction. *Obesity*. 2011;19:1382-1387.
24. Dassen FC, Houben K, Allom V, Jansen A. Self-regulation and obesity: The role of executive function and delay discounting in the prediction of weight loss. *J. Behav. Med.* 2018;41(6):806-818.
25. Johnstone SJ, Dimoska A, Smith JL, Barry RJ, Pleffer CB, Chiswick D et al. The development of stop-signal and Go/Nogo response inhibition in children aged 7-12 years: Performance and event-related potential indices. *Int. J. Psychophysiol.* 2007;63:25-38.
26. Verbruggen F, Logan GD. Response inhibition in the stop-signal paradigm. *Trends Cogn Sci.* 2008;12:418-424.
27. Blackwell KA, Munakata Y. Costs and benefits linked to developments in cognitive control. *Dev. Sci.* 2014;17(2):203-211.
28. Evenden JL. Varieties of impulsivity. *Psychopharmacology*. 1999;146:348-361.
29. Bari A, Robbins TW. Inhibition and impulsivity: Behavioral and neural basis of response control. *Prog. Neurobiol.* 2013;108: 44-79.
30. Bongers P, van de Giessen E, Roefs A, Nederkoorn C, Boonij J, van den Brink W et al. Being impulsive and obese increases susceptibility to speeded detection of high-calorie foods. *Health Psychol.* 2015; 34(6):677-85.
31. Davis C, Levitan RD, Muglia P, Bewell C, Kennedy JL. Decision-making deficits and overeating: A risk model for obesity. *Obes. Res.* 2004;12(6):929-935.
32. Houben K, Nederkoorn C, Jansen A. Eating on impulse. The relation between overweight and food-specific inhibitory control. *Obesity*. 2014;22: E6-E8.
33. Price M, Lee M, Higgs S. Self-reported eating traits: Underlying components of food responsiveness and dietary restriction are positively related to BMI. *Appetite*. 2015;95:203-210.
34. Fields S, Sabet M, Reynolds B. Dimensions of impulsive behavior in obese, overweight, and healthy-weight adolescents. *Appetite*. 2013;70:60-66.
35. He Q, Xiao L, Xue G, Wong S, Ames SL, Schembre SM et al. Poor ability to resist tempting calorie rich food is linked to altered balance between neural systems involved in urge and self-control. *Nutrition*. 2014;13:1-12.
36. Stoeckel LE, Weller RE, Cook III EW, Twieg DB, Knowlton RC, Cox JE. Widespread reward-system activation in obese women in response to pictures of high-calorie foods. *Neuroimage*. 2008;41(2):636-647.
37. Lawrence NS, O'Sullivan J, Parslow D, Javaid M, Adams RC, Chambers C. D et al. Training response inhibition to food is associated with weight loss and reduced energy intake. *Appetite*. 2015;95:17-28.
38. Stice E, Yokum S, Velting H, Kemps E, Lawrence NS. Pilot test of a novel food response and attention training treatment for obesity: Brain imaging data suggest actions shape valuation. *Behav. Res. Ther.* 2017;94:60-70.

39. Cañas JJ, Quesada JF, Antolí A, Fajardo I. Cognitive flexibility and adaptability to environmental changes in dynamic complex problem-solving tasks. *Ergonomics*. 2003;46:482-501.
40. Deak GO, Wiseheart M. Cognitive flexibility in young children: General or task-specific capacity? *J. Exp. Child Psychol.* 2015;138: 31-53.
41. Kehagia AA, Murray GK, Robbins TW. Learning and cognitive flexibility: frontostriatal function and monoaminergic modulation. *Curr. Opin. Neurol.* 2010; 20(2):199-204.
42. Jeffery RW, Drewnowski A, Epstein LH, Stunkard AJ, Wilson GT, Wing RR. et al. Long-term maintenance of weight loss: current status. *Health Psychol.* 2000;19(1): 5-16.
43. Mobbs O, Iglesias K, Golay A, Van der Linden M. Cognitive deficits in obese persons with and without binge eating disorder. Investigation using a mental flexibility task. *Appetite.* 2011;57:263–271.
44. Roberts M, Tchanturia K, Stahl D, Southgate L, Treasure J. A systematic review and meta-analysis of set-shifting ability in eating disorders. *Psychol. Med.* 2007;37:1075-1084.
45. Gerdan G, Kurt M. Eksojen obezitede yönetici işlevler ve yeme stili arasındaki ilişkinin incelenmesi. *Yeni Symposium.* 2020 (In press).
46. He Q, Xiao L, Xue G, Wong S, Ames SL, Xie B, Bechara A. Altered dynamics between neural systems sub-serving decisions for unhealthy food. *Front. Neurosci.* 2014;8:350.
47. Posner MI, DiGirolamo GJ. Executive attention: Conflict, target detection and cognitive control. In: R Parasuraman editor. *The attentive brain.* Cambridge: MIT Press;1998. P. 401-423
48. Scarpina F, Tagini S. The stroop color and word test. *Front. Psychol.* 2017;8:557.
49. Hotham S, Sharma D. The relationship between top-down attentional control and changes in weight. *Eat. Behav.* 2015;18: 81-83.
50. Cohen DA, Farley TA. Eating as an automatic behavior. *Prev. Chronic Dis.* 2008;5:1-7.
51. Smith E, Treffiletti A, Bailey PE, Moustafa AA. The effect of attentional bias modification training on food intake in overweight and obese women. *J. Health Psychol.* 2020;25(10-11):1511-1521.