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Information for Authors

Turkish Journal of Clinical Psychiatry includes researches, reviews, brief reports, and letter to the editor reports in the fields of Psychiatry, Clinical Psychology, Psychopharmacology and psychiatry issues of neurology. The journal, published four times a year, accepts Turkish and English articles.

For submitted articles; submission, evaluation, publication at any stage of the fee is not requested.

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On the first page, the name, surname, title, work addresses and e-mail addresses of the authors should be listed below the title of the article. In the end, the address, telephone and e-mail address of the responsible author should be included

For the researches, brief report, case reports and review articles, it is obligatory to have Turkish abstracts and keywords, English title, English abstract and English keywords. The Turkish abstract should consist of at least 150, at most 200, at least 230, at most 250 words. Key words should be at least 3 and no more than 6 words, depending on Index Medicus. The research articles and brief reports should consist of headings in Turkish and English abstracts, Objectives, Method, Results, Conclusion.

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The research articles should consist of the following subheadings: Introduction, Methods, Results, Discussion and Conclusion. The research articles should consist of headings in Turkish and English abstracts, Objectives, Method, Results, Conclusion.

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The limitations, barriers and inadequacies of original research should be mentioned in the "Discussion" section before the conclusion section.

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In the case of review and case report types, the main writing scheme above should be followed. After the summary page, it should be taken in accordance with the type of the article, and the number of references in the collections should not exceed 50. In reviews, one of the writers must have published three or more original researches on the subject. Review authors should have accumulated expertise on the topic, as international literary publications and citations. Authors who meet these criteria can be invited by the Editorial Board to write review articles.

The introduction and discussion parts of the case reports presentations should be concise and the number of references should be limited. These articles should include the subheadings "Introduction", "Case Report" and "Discussion".

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When cited, the latest and most recent publications should be preferred. DOI numbers of earlier cited online articles must be provided. The authors are responsible for the correctness of the references. Journal titles should be abbreviated in accordance with journal abbreviations in Index Medicus / Medline / PubMed. All author names should be listed in the references. Arabic numbers should be used in parantheses when referring to references in the main text.

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Abedi MR, Bahrami F, Etemadi O, Fatehizadeh M, Ghasemi V. Personality types and marital satisfaction. Interdiscip J Contemp Res in Bus 2012; 4:372-383.

Blum JS, Mehrabian A. Personality and temperament correlates of marital satisfaction. J Pers 1999; 67:93-125.

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Boyce P, Parker G, Barnett B, Cooney M, Smith F. Personality as a vulnerability factor to depression. Br J Psychiatry 1991; 159:106-114.

Zinbarg RE, Barlow DH, Liebowitz M, Street L, Broadhead E, Katon W, Roy-Byrne P, Lepine J-P, Teherani M, Richards J, Brantley PJ, Kraemer H. The DSM-IV field trial for mixed anxiety-depression. Am J Psychiatry 1994; 151:1153-1162

An additional number of journal,

Beskow J. Depression and suicide. Pharmaco-psychiatry 1990; 23 (Suppl 1): 3.

Burrows GD, Norman TR, Judd FK, Marriott PF. Short-acting versus long-acting benzodiazepines: discontinuation effects in panic disorders. J Psychiatr Res 1990; 24 (suppl 2): 65-72.

If the reference is a book,

Beahrs JO. The Cultural Impact of Psychiatry: The Question of Regressive Effects, in American Psychiatry After World War II: 1944-1994. Edited by Menninger RW, Nemiah JC. Washington, DC, American Psychiatric Press, 2000, pp. 321-342.

If the reference is the translation book,

Saddock BJ, Saddock VA. Klinik Psikiyatri. Aydın H, Bozkurt A (Çeviri Ed.) 2. Baskı, Ankara: Güneş Kitabevi Ltd. Şti., 2005, 155-157.

If the reference is thesis,

Yılmaz B. Ankara Üniversitesindeki Öğrencilerin Beslenme Durumları, Fiziksel Aktiviteleri ve Beden Kitle İndeksleri Kan Lipidleri Arasındaki İlişkiler. H.Ü. Sağlık Bilimleri Enstitüsü, Doktora Tezi. 2007.

For the articles in the press,

Cai L, Yeh BM, Westphalen AC, Roberts JP, Wang ZJ. Adult living donor liver imaging. Diagn Interv Radiol 2016; 24. doi: 10.5152/dir.2016.15323. [In press].

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Yumru M, Savas HA, Kalenderoglu A, Bulut M, Erel O, Celik H. İkiuçlu bozukluk alt tiplerinde oksidatif dengesizlik. 44. Ulusal Psikiyatri Kongresi Bildiri Kitabı 2008; 105.

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World Health Organization. Depression. http://www.who.int/mediacentre/ factsheets/fs369/en/. Erişim tarihi: Ağustos 22, 2016.

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Günümüzde kitle iletişim araçları ve ruh sağlığı alanında etik

Contemporary mass media tools and ethical consideration in mental health services

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Ülkemizde, tıp alanında "etik" kavramını hem tüzel metinlerine hem de pratik uygulamalarına, kuruluşundan itibaren ilk geçiren meslek örgütlerinden birisi Türkiye Psikiyatri Derneği'dir. Teknolojinin ve kitle iletişim araçlarının gelişmesi ile birlikte etik kavramların, tüzel metinlerin zaman içerisinde yeniden ele alınması gerekmektedir. Bu ihtiyaç zaman içerisinde de devam edecek görünmektedir.

Ruh sağlığı çalışanları denildiğinde, psikiyatri, psikolog, hemşire vb. yani insanlara ruhsal şifa vermek adına hizmet verme yetki, yetkinlik ve yeterliliği olan sağlık çalışanları akla gelmelidir. Sağlık alanında çalışanların insanlara şifa dağıtmasının yanında görev kapsamları dâhilinde toplumu bilgilendirme görevi de vardır. Koruyucu sağlık hizmeti ancak bu şekilde yürütülebilir. Ancak günümüzde, özellikle televizyon ekranlarında ve çeşitli internet mecralarında karşılaştığımız işitsel ve görsel yayınları göz önüne alırsak, ruh sağlığı çalışanlarının şifa vermek ve toplumu bilgilendirmekten öte, meslek etiği kavramlarını göz ardı eden, hiçe sayan, daha çok ticari kaygıların ön planda tutulduğunu düşündüren azımsanmayacak oranda etkinliğin yaşama geçirildiğini görmekteyiz. Bu durum ruh sağlığı alanında etik ilke ve değerlerin sürekli ve yeniden ele alınması ve bu doğrultuda tüzel metinlerimizin gözden geçirilmesi gerekliliğini bir kez daha gözler önüne sermektedir. Ruh sağlığı alanında önemli bir halk sağlığı sorunu haline gelen kitle iletişim araçlarında yaşanan etik ihlaller için hepimize önemli görevler düşmektedir.

Sağlık alanında diziler, filmler, programlar toplumun her zaman dikkatini cezbetme özelliğine sahip olmuştur ve bu nedenle her dönemde hastanede geçen diziler ya da filmler ve özellikler gündüz kuşağı olarak adlandırılan programlarda sağlık hizmeti verenlerin katılımlarıyla çekilen bölümler ya da sadece sağlık çalışanlarını konuk olarak alan programlar mevcuttur. Söz konusu ruh sağlığı olduğunda ise bu işin doğasında yer alan hasta mahremiyeti kavramı; psikoterapi odasında sadece psikoterapist ve hastanın yer alması, sürecin sadece o odada yer alan kişilere özel olması, insan ruhsallığının anlaşılmazlığı, bazı ruhsal hastalıkların doğası gereği sahip olduğu ve bazen toplum tarafından anlaşılması güç olan belirtilere sahip olması (sanrı, varsanı, fonksiyonel nörolojik belirtiler, takıntılar, zorlantılar vb.) bu alanı işin profesyoneli olmayanlar tarafından daha da cezbedici hale getirmektedir. Bu cezbedici özellikler son dönemde yurt içinde yayın yapan televizyonların içerik üreticilerinin de bir hayli dikkatini çekmiş olmalı ki bugün hem ücretsiz a hem de paralı televizyon kanallarında giderek artan sayıda programlar, diziler ve filmler kanalların yayın akışlarının büyük bir kısmını kaplamaya başlamıştır. Neredeyse her kanalda "Gerçek Yaşam Öyküsünden Uyarlanmıştır" adı altında muhtemelen ruh sağlığı sorunu bulunan ve yardım arayışında olan bireylerin hayat hikayelerinin eklemeler ve çıkarmalarla sunulduğu diziler mevcuttur. Daha da ötesi bir gündüz kuşağı programında kişilerin gönderdikleri ses kayıtları ya da canlı telefon bağlantıları üzerinden aslında psikoterapi ya da muayenehane odasında yer alması gereken bilgilerin paylaşıldığı görülmektedir.

Bu tür programların önemli sakıncaları mevcuttur ve beraberinde şu soruları sormamızı gerektirmektedir: Ruhsal bozukluğu olanlar diziler ve filmlerde nasıl yer almalı ya da almamalıdır? Ruh sağlığı çalışanlarının televizyon ekranlardaki yeri neresidir, nasıl olmalıdır?

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İlk olarak sakıncalarından başlamak gerekirse, yaşam öyküsünün bir firmaya sunularak dizi haline getirilmesi konusunda o kişiden bir izin alınmış olması o kişinin kendi hayatını televizyon ekranında görmesi ve başkaları tarafından da görülmesinin yaratacağı ruhsal yükü hafifletmez.

Bir diğer sakınca, bu dizilerin içerikleri incelendiğinde kadına, hayvana ve çocuğa şiddet, ensest ilişkiler, cinsel istismar, fiziksel ihmal ve fiziksel istismar, duygusal ihmal ve istismar gibi travmatik deneyimler abartılı bir şekilde izleyiciye sunulmasıdır. Ruh sağlığı çalışanlarının temel görevi ruhsal şifa dağıtmak iken bu tür ruh sağlığı sorunları olan kişileri damgalama ve izleyenlerin örselenmesine yol açan bu görüntülerin yayınlanmasında bir parça da olsa role sahip olmuş olmaları meslek etiğine aykırıdır. Aynı zamanda koruyucu ruh sağlığı hizmetleri açısından bakıldığında da bu dizilerde sunulan travmatik deneyimlerle kişilerin nasıl baş edebileceğinin bilgisi sunulmamaktadır.

Ruh sağlığı hizmeti vermenin içeriğinde danışmanlık vermek yer alsa da anamnez almadan ve ruhsal durum muayenesi yapmadan kişiye danışmanlık vermek de meslek etiğinin dışında kalır. Ruh sağlığı hizmeti de hizmetin verilebileceği uygun koşullarda gerçekleştirilmelidir. Ruhsal sorunlarının çözümü ruh sağlığı profesyonellerince yürütülmesi gereken ve yine ilgili profesyonellerce aşağıda belirtilen yasa ve yönetmeliklerce tanımlanmış ruh sağlığı kliniklerinde yapılması gerekmektedir.

Mahremiyet önemli etik kurallardan biridir. Hasta/danışandan alınan bilgiler hasta/danışan-hekim arasında kalmalı, bir televizyon programı üzerinden izleyici ile paylaşılmamalıdır. Ek olarak, psikiyatrik muayenelerde kişiler, bulundukları ruhsal durum, yardım arama ihtiyaçları, hekime duydukları güven nedeniyle muayenede en özel bilgilerini paylaşmak isteyebilirler. Hekimler temel etik ilkeleri koruyarak hastaları suistimal etmemeli, onların muayenelerini isim belirterek ya da belirtmeyerek yayınlamamalıdır. Ayrıca yardım arayarak bu programlara başvuran ve ruhsal şikayetlerini belirten kişiler toplum tarafından damgalanma riski altındadır.

Hasta hakları yönetmeliği 21. Madde b bendinde açıkça belirtildiği şekilde "Muayenenin, teşhisin, tedavinin ve hasta ile doğrudan teması gerektiren diğer işlemlerin makul bir gizlilik ortamında gerçekleştirilmesini" hasta/danışan ile her türlü temasta mahremiyete saygı gösterilmesi zorunludur (1).

Kişilerin özel bilgilerinin ve ruhsal süreçlerinin, kendi onamları olsa dahi, reyting amaçları ile bu şekilde sergilenmesi mesleki kurallara, insan haklarına ve temel etik kodlarına aykırıdır. Psikiyatri hekiminin kitle iletişim araçlarında sır saklama yükümlülüğü, Türkiye Psikiyatri Derneği Ruh Hekimliği Meslek Etiği Kuralları 7. Maddesi'nde açıkça tanımlanmıştır (2).

Ruh hekimliği (psikiyatri) tıp biliminin bir dalıdır ve her ruh hekimi tıbbın evrensel etik ilkelerine uymak zorundadır (3).

Ruh sağlığı çalışanlarının televizyon ekranları başta olmak üzere görsel medyadaki yeri toplumu bilgilendirmekten ve uygun sağlık hizmetini alabilmesi adına yönlendirmekten daha öteye gitmemelidir. Vaka sunumları meslek eğitiminin bir parçası olmakla birlikte gerçek insanların vaka öykülerinin sunulması ruh sağlığı eğitimi ve bilimsel toplantıların bir parçası olarak kalmalıdır. Koruyucu ve bilgilendirici sağlık hizmeti olarak insana ve topluma dair gözlemlerin halka sunulmasının yanında bu bilgilerle ne yapacakları ve nasıl baş edeceklerinin de sunulması gerekmektedir.

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KAYNAKLAR

1. https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=4847&MevzuatTur=7&MevzuatTertip=5 İndirilme tarihi: 05.06.2023 tarihinde indirilmiştir.

2. https://psikiyatri.org.tr/tpd-kutuphanesi/belge/311 İndirilme tarihi: 05.06.2023 tarihinde indirilmiştir.

3. Civaner, M. (2017). Dünya Tabipler Birliği Tıp Etiği Elkitabı.

Contemporary mass media tools and ethical consideration in mental health services

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In our country, The Psychiatry Association of Turkey is one of the Professional organizations that has incorporated the concept of “ethics” in both its legal texts and practical applications from its inception in the field of medicine. With the development of technology and mass communication tools, ethical concepts and legal texts must be reconsidered over time. This need appears to continue in the future.

When we mention mental health professionals, we should think of psychiatrists, psychologists, nurses, etc. In other words, healthcare workers who have the authority, competency, and proficiency to provide psychological healing to individuals. In addition to distributing healing to individuals, health workers also have the duty to inform the public within the scope of their responsibilities. Preventative health services can only be conducted in this way. However, in today's world, especially when we consider the auditory and visual broadcasts we encounter on television screens and various internet platforms, we see that a considerable amount of activity has been initiated, suggesting that mental health professionals neglect and disregard professional ethics concepts and prioritize commercial concerns over healing and informing the public. This situation once again brings to light the necessity to continuously and repeatedly address ethical principles and values in the field of mental health and review our legal texts accordingly. Significant responsibilities fall on all of us for ethical violations occurring in mass communication tools, which have become a major public health issue in the field of mental health.

Series, films, and programs in the health field have always captivated public attention, hence there have always been hospital-based series or films, and programs particularly in daytime slots, featuring segments shot with the participation of healthcare providers or simply hosting health workers as guests. When it comes to mental health, the concept of patient confidentiality inherent in this profession; the fact that only the psychotherapist and the patient are present in the psychotherapy room, that the process is exclusive to those present in that room, the inexplicability of human spirituality, and the challenging symptoms that some mental illnesses inherently possess (delusions, hallucinations, functional neurological symptoms, obsessions, compulsions, etc.), which are sometimes hard for the community to understand, make this field even more appealing to those who are not professionals. These captivating features must have caught the attention of content creators of domestic TV channels in recent times as today an increasing number of programs, series, and films have begun to take up a significant portion of the broadcast schedules on both free and paid TV channels. There are series presented on almost every channel under the title "Adapted from a True Life Story," presumably featuring the life stories of individuals with mental health problems who are seeking help, with additions and deletions. Moreover, in a daytime show, it is observed that information that should actually be confined to the psychotherapy or doctor's office is being shared via voice recordings sent by individuals or live phone connections.

Such programs have significant drawbacks and compel us to ask the following questions: How should individuals with mental disorders be portrayed in series and films, or should they be portrayed at all? What is the place of mental health workers on television screens, and how should it be?

Firstly, even if the person has permitted for his/her life story to be turned into a series by presenting it to a company, this cannot alleviate the mental burden of seeing his/her own life on the television screen or being seen by others. Another concern is the portrayal of traumatic experiences such as violence against women, animals, and children, incestuous relationships, sexual abuse, physical neglect and abuse, emotional neglect, and abuse in an exaggerated manner when the content of these series is examined. While the primary duty of mental health workers is to provide psychological hea-

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ling, their involvement, even if minimal, in broadcasting such images that stigmatize individuals with mental health problems and cause distress to viewers is against professional ethics. Furthermore, from the perspective of preventive mental health services, these series do not provide information on how individuals can cope with the traumatic experiences presented.

Although counselling is an integral part of mental health services, providing advice without obtaining a comprehensive medical history and conducting a mental status examination falls outside of professional ethics. Mental health services must be provided under appropriate conditions. The treatment of mental health issues should be conducted by mental health professionals, as defined by relevant professionals through the laws and regulations stated below, and should occur within mental health clinics.

Confidentiality is a key ethical principle. Information obtained from the patient or client should remain between the patient/client and the mental health worker, and not be shared with an audience via a television program. Moreover, during psychiatric examinations, individuals may wish to share their most intimate details due to their mental state, the need for help, and the trust they place in the physician. Physicians must uphold fundamental ethical principles, avoiding any exploitation of their patients and not broadcasting their examinations, whether the patient's name is disclosed or not. Furthermore, individuals who seek help by appearing on these programs, and sharing their mental health issues, are at risk of being stigmatized by the public.

As clearly stated in Article 21, paragraph b of the Patient Rights Regulation, "The performance of examinations, diagnoses, treatments, and other procedures requiring direct contact with the patient in a reasonably private environment" is mandatory in any interaction with the patient/client (1).

The public display of individuals' private information and mental processes, even with their consent, for ratings purposes, is contrary to professional rules, human rights, and fundamental ethical codes. The duty of a psychiatric doctor to maintain confidentiality in mass media is clearly defined in Article 7 of the Code of Professional Ethics of Psychiatry by the Psychiatry Association of Turkey (2).

Psychiatry is a branch of medical sciences, and every psychiatrist is obliged to comply with the universal ethical principles of medicine (3).

The role of mental health workers on television should not go beyond informing the public and directing them to receive appropriate health services. Case presentations, while using real human case histories is part of professional training, should remain a component of mental health workers' education and scientific meetings. As part of preventive and informative health services, observations about individuals and the public should be presented to the public, along with guidance on what to do with this information and how to cope.

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Psychotherapy training in Turkey: Experience of early career psychiatrists

Türkiye'de psikoterapi eğitimi: Kariyerinin erken dönemindeki psikiyatristlerin deneyimleri

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SUMMARY

Objective: Theoretical and practical psychotherapy training improves psychiatrists' case management and treatment skills. However, little is known about the extent that in Turkey early career psychiatrists have access to these opportunities and their experiences, so in this study, we aimed to investigate various aspects of the psychotherapy training of early career adult, child and adolescent psychiatrists in Turkey. **Method:** A 22 items questionnaire was disseminated in Turkey to psychiatry trainees and early career psychiatrists (psychiatry and child and adolescent psychiatry trainees and specialists who are in the first 5 years of their career and younger than 40). The questionnaire inquired about participants': i) sociodemographics; ii) the quality of the psychotherapy training; iii) organizational aspects of psychotherapy training; iv) satisfaction with psychotherapy training. **Results:** A total of 103 individuals (n=41 psychiatrists, n=37 psychiatry trainees, n=12 child and adolescent psychiatrists, and n=13 child and adolescent psychiatry trainees) responded to this questionnaire. While 68% of the participants stated that psychotherapy training is included in psychiatry training, 89.3% stated they have conducted psychotherapy training themselves and 76.7% reported that they received supervision. Only 41.7% stated that they were going to their own personal psychotherapy or had gone before, and 59.2% were not a qualified psychotherapist. **Discussion:** One third of psychiatry and child and adolescent psychiatry trainees in Turkey cannot access psychotherapy training in their institutes, and one fourth cannot access supervision opportunities, and more than half are deprived of their personal therapy processes. This should be addressed to improve the skills and competencies of psychiatrists that train in Turkey.

Key Words: Psychotherapy, Psychiatry training, Supervision, Psychotherapy research

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ÖZET

Amaç: Teorik ve uygulamalı psikoterapi eğitimi, psikiyatristlerin vaka yönetimi ve tedavi becerilerini artırır. Ancak, Türkiye'deki psikiyatristlerin bu fırsat ve deneyimlere ne ölçüde eriştikleri hakkında çok az şey bilinmektedir, bu nedenle çalışmamızda Türkiye'de kariyerinin erken dönemlerindeki yetişkin, çocuk ve ergen psikiyatristlerinin psikoterapi eğitimlerini çeşitli yönleriyle incelemeyi hedefledik. **Yöntem:** Katılımcıların i) sosyodemografik özellikleri ii) psikoterapi eğitiminin niteliksel yönleri iii) psikoterapi eğitiminin organizasyonel yönleri; iv) psikoterapi eğitiminden memnuniyetini ölçmeyi hedefleyen 22 soruluk ölçek formu kariyerinin erken dönemindeki psikiyatristlere (erişkin, çocuk ve ergen psikiyatri asistanları ve ilk 5 yıllık, 40 yaşından küçük uzmanlarına) online olarak verilmiştir. **Bulgular:** Çalışmaya toplam 103 kişi (41 psikiyatri uzmanı (ilk 5 yıl), 37 psikiyatri asistanı, 12 çocuk ve ergen psikiyatri uzmanı (ilk 5 yıl) ve 13 çocuk ve ergen psikiyatrisi asistanı) katıldı. Katılımcıların %68'i psikoterapi eğitiminin psikiyatri eğitiminin içinde yer aldığını belirtirken, %89,3'ü psikoterapi eğitimi, %76,7'si süpervizyon aldığını belirtmiştir. Ayrıca katılımcıların sadece %41,7'si kendi kişisel psikoterapisine gittiğini ve %59,2'si sertifiye bir psikoterapist olmadığını ifade etmiştir. **Sonuç:** Türkiye'de kariyerinin erken dönemindeki psikiyatri ve çocuk ve ergen psikiyatristlerinin yaklaşık üçte biri uzmanlık eğitimi aldıkları kurumda psikoterapi eğitimi alamamakta, dörtte biri süpervizyon olanaklarından yararlanamamakta ve yarısından fazlası kişisel terapi süreçlerinden mahrum kalmaktadır. Türkiye'de eğitim alan psikiyatristlerin beceri ve yeterliliklerini geliştirmek için bu eksikliklerin tespiti ve giderilmesi önemlidir.

Anahtar Sözcükler: Psikoterapi, Psikiyatri eğitimi, Süpervizyon, Psikoterapi araştırması

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INTRODUCTION

According to the World Health Organization (WHO), approximately 970 million people, one of every eight people in the world, experience mental diseases which are associated with high morbidity and mortality, and to a significant disease burden (1,2). The education of mental health physicians is important for the society to receive effective and safe mental treatment and care (3). Studies show that the quality of education is related to the competence of clinicians, and this leads to better results in the treatment of mental diseases (4). However, the quality and standard of this education varies all over the world due to economic, political, societal, and social factors (3).

In the second half of the last century, psychiatry has transformed from a field whose main treatment method is psychotherapy, to a specialty based on complex diagnostic categories and biological-based treatment methods with the influence of neurobiological studies and discovered pharmacological agents (5). The differentiation of disease concepts and treatment expectations has led to changes in the role and identity of psychiatrists, causing psychiatrists to move away from psychotherapy and focus on psychiatric medication (6). Today, evidence-based psychotherapy practices have been found to be effective and cost-effective in different psychiatric diseases and have been included in international treatment guidelines (7). The acquisition of competency in psychotherapy contributes to the professional development of psychiatrists, expands their therapeutic repertoire in clinical practice, and helps them to counsel and lead the mental health team psychiatrists work with, even if they do not choose to practice psychotherapy (4). A successful psychiatrist who has also received training in psychotherapy can be aware of the etiological factors in each of the medical, pharmacological, social, and psychological areas of the mental illness (8). However, psychiatrists' practice of psychotherapy is declining, even if the evidence for the effectiveness and contributions of psychotherapy is increasing (5,9). Studies on psychiatrists working in the US showed that only 29% provided psychotherapy to their patients in 2004-2005, compared to 44% in 1996-1997 (10). Additionally, results of a 2012 survey of 394 psychiatrists conducted by the American Institute of Psychiatry's Psychotherapy Committee showed that from 2002 to 2010, the practice of psychotherapy alone or in addition to medication decreased from 68% to 48% in office visits (11). The reasons reported for this reduction were the difficulties of meeting the therapy fee, the limitation of time, patients and physicians finding the medication more practical, and the decrease in the number of psychiatrists specialized in psychotherapy (6). In many medical faculties and educational hospitals that train mental health physicians, there is a gradual decrease in psychotherapy services and education (3,5).

In the postgraduate psychiatry training, trainees are expected to have knowledge of psychodynamic psychotherapy, cognitive behavioral therapy, supportive psychotherapy, and other psychotherapy modalities, and to demonstrate the competence to be a practitioner to some extent. However, studies show that the education provided is variable in terms of quality and quantity in different world regions (12). In a study conducted by the World Psychiatric Association in 47 countries, it was shown that only 59% of the member countries require obligatory psychotherapy training (3). The expected service demand from physicians during psychiatry training in clinical practice, a wide range of patients, the presence of a large number of competing subjects, multiple rotations, lack of educators or consultants with advanced psychotherapy training are the limitations that prevent the implementation of what is planned in theory (4,13). In a study conducted with psychiatrists in Canada, it was found that a quarter of physicians did not feel competent to practice psychotherapy without supervision when graduating (14).

In Turkey, in the core curriculum of the psychiatry training, it is recommended that trainees should treat and follow up patients for at least 12 months, using psychodynamic, cognitive-behavioral and biological approaches, under regular supervision (15). However, in clinical practice, little is known about the accessibility of psychiatry trainees and early career psychiatrists in Turkey to the recommended standard psychotherapy training and their satisfaction with the training received. Therefore, this study aimed to examine how psychotherapy is included in mental health education in Turkey and

to determine the accessibility to it. Our hypotheses were that early career psychiatrists had some difficulties in accessing psychotherapy training and supervision, individual therapy opportunities were insufficient, and the rate of certified therapists was relatively low.

METHOD

Participants

Early career psychiatrists (psychiatry and child and adolescent psychiatry trainees and early career specialists under the age of 40 who were in the first 5 years of their profession) in Turkey were included in the study, which was disseminated through snowball sampling. The research questionnaire was sent to the participants via professional mail groups and WhatsApp groups. Data were collected over a 8-month period between 05.07.2021 and 05.03.2022. The inclusion criteria were: i) being aged below 40, ii) working as a psychiatric trainee or as an early career psychiatrist in Turkey. The ethics committee approval from Istanbul Erenkoy Training and Research Hospital was received and written informed consent was obtained from all participants. This study complies with the Declaration of Helsinki.

Study instrument

A 22-items questionnaire was developed for the "World Psychotherapy Survey". The questionnaire inquired about: i) sociodemographics; ii) the quality of the psychotherapy education: modality of type of psychotherapy education available; format and availability of supervision; iii) organizational aspects of psychotherapy training (mandatory/optional), payment iv) satisfaction with psychotherapy training (v) qualification in psychotherapy areas) are evaluated. The research questionnaire was developed by the Early Career Psychiatrists Section of the World Psychiatric Association.

Statistics

Statistical analyses were performed on IBM SPSS Statistics version 23.0 (IBM Corp., USA). Numerical variables were presented as mean and standard deviation. Categorical variables were presented with n (%) values. The distribution of the variables was evaluated with the Kolmogorov-Smirnov test. Mann-Whitney U test and independent samples t-test were used in the analysis of quantitative data. Chi-square test and Fischer's exact test were used in the analysis of nominal data. A two-sided p-value of less than 0.05 was judged to be statistically significant.

RESULTS

Sociodemographics

A total of 103 participants responded to this survey, of which 41 were psychiatrists, 37 were psychiatry trainees, 12 were child and adolescent psychiatrists, and 13 were child and adolescent psychiatry trainees. The participants' mean age was 31.12±.318 for the total group, 31.15 ±3.21 for adult psychiatrists, 31±3.35 for child and adolescent psychiatrists, and there was no significant difference between the mean ages of the two groups (p=0.9). The majority (n=64, 62.1%) of the participants were female.

The quality of the psychotherapy training

All participants considered that psychotherapy training should be a part of the psychiatry training, and the vast majority (n= 92, 89.3%) stated that they had or are receiving psychotherapy training. Among these, most (n=42, 40.8%) received both practical and theoretical training, whereas the rest received either theoretical training (n=17, 16.5%) or practical training (n=12, 11.7%). The most frequently trained therapy modalities were cognitive behavioral therapy (n=76, 73.8%), psychodynamic therapy (n=53, 51.5%) interpersonal therapy (n= 9, 8.7%), family therapy (n=9, 8.7%), psychodrama (n=6, 5.8%) and other therapy training (n=10, 9.8%) (e.g. sexual therapy, EMDR, schema therapy, etc.) respectively. While the majority (n=79, 76.7%) stated that they could receive supervision, only a few (n=11, 14.2%) stated that they received individual supervision, more than half (n=44, 56.8%) received group supervision, and more than

a quarter (n=22, 28.4%) stated that they received both. Less than half (n=43, 41.7%) stated that they could not undergo themselves to their own psychotherapy. The rate of certified therapists was only 42 (40.8%).

Organizational aspects of psychotherapy training

More than half of the participants (n=58, 56.3%) stated that the cost of the psychotherapy training was fully covered by themselves, whereas the rest was either by the institution (hospital/government) they work for (n=23, 22.4%), or by both themselves and the institution they work for (n=22, 21.4%). Most (n=59, 74.6%) of those who received supervision stated that this was optional, and the others (n= 21, 26.4%) reported this was mandatory. Nearly half of the participants (n=33, 43.4%) who received the supervision were able to receive 50-100 hours of supervision throughout their entire education.

Satisfaction with psychotherapy training

Most were satisfied or very satisfied with their psychotherapy training (n=78, 83.8%).

Various aspects of early career psychiatrists' psychotherapy training and their sociodemographic characteristics are shown in Table 1.

There were 78 adult psychiatrists and 25 child and adolescent psychiatrists in this sample. While there was no difference between the two groups in terms of psychotherapy training rates (p=.806), satisfaction with psychotherapy training (p=.698), personal psychotherapy history (p=.503) and certification rates (p=.135), supervision rates were significantly higher in the adult psychiatrists (p<0.001). The comparison of the characteristics of psychotherapy education by type of profession is presented in Table 2.

Table 1. Several aspects of psychotherapy training of the early career psychiatrists

Variables	Mean (Standard deviation) n (%)
Age	31,12 (,318)
Gender	
Female	64 (62,1%)
Male	39 (37.9%)
Type of Profession	
Adult psychiatry trainees	37 (35.9%)
Adult psychiatry specialists	41 (39.8%)
Child and adolescent psychiatry trainees	13 (12,6%)
Child and adolescent psychiatry specialists	12 (11.7%)
Rates of psychotherapy education	92 (89.3%)
Type of psychotherapy education	
Theoretical teaching of psychotherapy	17 (16,5%)
Practical teaching of psychotherapy	12 (11,7%)
Both	42 (40,8%)
None	32 (31 %)
Modalities	
Cognitive behavioral therapy	76 (73,8%)
Family therapy	9 (8,7%)
Psychodynamic psychotherapy	53 (51,5%)
Psychodrama	6 (5,8%)
Interpersonal psychotherapy	9 (8,7%)
Other	10 (9,8%)
Psychotherapy education fee payment	
Fully paid by the trainee	58 (56,3%)
Fully paid by the hospital or the training institution/government	23 (22,4%)
Partially paid by the trainee and another source	22 (21,4%)
Rates of supervision	79 (76,7%)
Supervisions' format	
Individual	11 (14.2%)
In Group	44 (56.8%)
Both	22 (28.4%)
Supervisions' duration throughout training	
<50 hours	18 (23.6%)
50-100 hours	33 (43.4%)
>100 hours	25 (32.8%)
Satisfaction with psychotherapy training	
Dissatisfied	2 (2.1%)
Neither satisfied nor dissatisfied	13 (13.9%)
Satisfied	58 (62.3%)
Very satisfied	20 (21.5%)
Personal psychotherapy history	43 (41,7%)
Qualification	42 (40,8%)

Data given with mean (standard deviation) or n (%)

DISCUSSION

Psychiatrists are in a unique position to be aware of the biological and psychological components of mental illness and to intervene with a holistic approach (14,16). However, it is thought that psychotherapy practices, which formed the basis of psychiatric education and practice in the past, are gradually losing their importance (17). Concerns have been raised over the importance and future position of psychotherapy in recent years, as it was found that after 1980, psychiatrists spent less time on psychotherapy than their former colleagues (18,19). A Canadian study of 385 psychiatry residents in 2007 showed that more than half of the participants' ability to practice psychotherapy was important to their identity as a psychiatrist, that psychotherapy was the treatment of choice for certain psychiatric disorders and were highly satisfied with their experience of psychotherapy training and the importance given to psychotherapy in training programs (14). A study conducted with 574 participants from 22 European countries in 2017, reported a willingness to learn psychotherapy practices in residency training and more than 90% wanted to practice psychotherapy in the future (20). Similarly, all participants in this study considered that psy-

Table 2. Comparison of adult psychiatrist and child and adolescent psychiatrist in terms of therapy education

	Adult psychiatrists (n=78) (Mean (Standard deviation)n (%)	**Child and adolescent psychiatrists (n=25) (Mean (Standard deviation)n (%)**	**Test statistics**	**p**
Age	31,15 (3,21)	31 (3,35)	Z=-,120*	0,9
Gender (F/M)	(44/34)	(20/5)	X^2 =4,47**	**0,034**
Specialist/trainee	41/37	12/13		
Rates of psychotherapy education	70 (89,7%)	22 (88%)	X^2 =,060**	,806
Rates of Supervision	67 (85,9%)	12 (48%)	$X^{2=}$15,214**	**<0.001**
Satisfaction with psychotherapy training	58 (82,9%)	19 (86,4%)	X^2 =,151**	,698
Personal psychotherapy history	34 (43,6%)	9 (36%)	X^2 =,448**	,503
Qualification	35 (44,9%)	7 (28%)	X^2=2,232**	,135

*: Mann Whitney U test, **: Chi square test, P<0.05

chotherapy should be included in psychiatry residency training.

It is debatable how much the psychotherapy education demanded during postgraduate training is met by educational institutions all over the world. According to the results of the study by the European Federation of Psychiatric Trainees in 31 countries, significant differences in the content and quality of education between European countries have been revealed (21). Particularly in high-income countries, psychiatry education committees have developed mandatory protocols for psychiatry trainees to gain competence in different psychotherapy models, and improvements have been made in psychotherapy education in recent years (22). In a study in which the World Psychiatric Association investigated psychiatry education in 47 WPA member countries and compared education in low- and high-income countries, it was found that, regardless of income, psychotherapy training is mandatory in psychiatry training in 59% of countries, the average training period is 160 hours, cognitive behavioral and psychodynamic therapy are preferred generally and the training programs are generally accredited by well-known institutions, and the competencies of the participants are evaluated (3). In our study, the majority of the participants stated that they received psychotherapy theoretical and supervision training; the duration of supervision was in the range of 50-100 hours in general. It is not surprising that cognitive behavioral therapy was the most preferred as a result of the psychotherapy trends around the world shifting from open-ended, longer, and less structured models of therapy to problem-focused and more time-limited therapies (22, 23). In a study with 112 ECP's in Iran, 98.2% of the participants stated that they received psychotherapy training, and cognitive behavioral therapy and psychodynamic psychotherapy were the most reported modalities integrated into their psychiatric training, these results are consistent with the findings of this study (24).

Psychotherapy education is very expensive when it is not provided by the educational institution (21). It has been reported in the studies that financial and time constraint is an important obstacle to receiving therapy training, and it has been suggested that the cost of education ought to be covered by the public (6, 20). In a study conducted by the World Psychiatric Association, it was stated that nearly half of the participants obtained psychotherapy training with their own efforts, 96% of them could spare time for training if they did not have to pay for training out of their own and were willing to pay an average of 9% of their annual salary for this training (20). More than half of the participants in our study covered the expenses for the training themselves. Despite this, the high demand for training confirms the high motivation of our participants. Therefore, psychiatrists might reach more psychotherapy training when the budget of public institutions to allocate this field is increased.

Approximately one fourth of the participants in our study consisted of child and adolescent psychiatry trainees and early carrier specialists. Although studies with child and adolescent psychiatrists at the beginning of their careers are much more limited, psychotherapy has gained importance in this specialty in the last 30 years. Psychotherapy training and practices are encouraged, such as cognitive behavioral therapy, psychodynamic psychotherapy, family therapy, play therapy, parent skills training, trauma focused therapies, and mindfulness-based therapies are preferred (25). Although it could not be generalized due to the

small number of participants, cognitive behavioral therapy and psychodynamic psychotherapies were preferred by adult psychiatrists in this group in our study. Although similar preferences to adult psychiatrists were observed in general, the rate of receiving supervision in this group was found to be lower than that of adult psychiatrists. In the previous studies, the results of the low number of supervisors were shown, and it was shown that the supervision was mostly from adult psychiatrists and clinical psychologists (25). In our study group, the rates may have been found to be low due to similar limitations. Comparative studies with larger populations are essential to better understand this issue.

While learning psychotherapy in psychiatry education, personal therapy provides an important experiential learning opportunity to therapists by directly benefiting from the process and increasing their confidence in the effectiveness of psychotherapy, as well as improving their technical skills by observing and experiencing therapeutic interventions, increasing their awareness of their own conflicts and working more effectively with the patient (26, 27). In the past, personal therapy experience was seen as indispensable in psychiatry training for people to become competent psychotherapists (28). However, over the years there has been evidence that this view has changed. In a study conducted in 1999, it was shown that 28% of the psychiatrists in the Louisville region of America were in psychotherapy, this rate increased to 57% in the Manhattan region in 2006, and in a study conducted in Canada in 2015, it was 55% (28,29,30). Similarly, almost half of the participants in our study received personal psychotherapy. In past studies, the main barriers to individuals going to personal therapy have been shown to be cost, difficulty in finding a therapist, privacy concerns, and stigma (28,30).

This is the first study investigating various aspects of psychotherapy training in psychiatry specialization process in Turkey. It also compares adult psychiatry and child and adolescent psychiatry trainees and early career psychiatrists who are trained in two different specialties in Turkey. As for the limitations, these results cannot be generalized to all adult, child and adolescent psychiatry residents and specialists in our country, due to the low sample size. In addition, the participants were not questioned about which year of training they were in. Another limitation is that there is no information about the total duration of the psychotherapy training and the exact number of ECPs in Turkey could not be established, so power analysis could not be performed. Since psychotherapy training in psychiatry residency training in Turkey is given in later years after learning basic psychiatry concepts, diagnosis, and treatments, it is possible that junior trainees are less knowledgeable about psychotherapy training and may mislead our results.

While all of the participants thought that psychotherapy training should be a part of the psychiatry training it seems important to determine which therapy modalities are preferred, the factors that prevent access to supervision and theoretical and practical psychotherapy training, and also to compare the education processes of adult, child and adolescent psychiatrists, in terms of increasing the quality of psychiatry training.

CONCLUSION

The majority of psychiatry and child and adolescent psychiatry trainees in Turkey can access theoretical and practical psychotherapy training and are satisfied with the training they received although more than half are deprived of undergoing personal psychotherapy themselves. Further comprehensive studies on the causes impacting their motivation and participation seem important in terms of improving psychiatry education.

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The relationships between intimate partner violence and attachment, personality features, and early maladaptive schemas

Partner şiddeti ile bağlanma, kişilik özellikleri ve erken dönem uyumsuz şemalar arasındaki ilişkiler

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SUMMARY

Objective: The literature shows that attachment styles, personality features, childhood maltreatment, cognitive schemas, and various socioeconomic and clinical issues can play an important role in intimate partner violence (IPV). This study investigated the relationship of IPV with attachment styles, schema domains, and personality beliefs in a treatment-seeking women group. **Method:** The participants were 75 women who presented to a psychiatric outpatient clinic and endorsed experiencing IPV during the previous year. We conducted a psychiatric evaluation and administered Young Schema Inventory-Short Form, Personal Belief Questionnaire-Short Form, Beck Depression Inventory, Beck Anxiety Inventory, Conflict Tactics Scale-2, and Experiences in Close Relationships-II. We performed correlation analyses and a stepwise regression analysis to determine the variables that affect IPV. A mediator analysis was performed to evaluate the role played by schema domains and personality beliefs in attachment styles and IPV. **Results:** Different levels of relationships were found between IPV and an anxious attachment style, some schema domains and personality beliefs. There was a relationship between an individual's negotiation attitude and the other-directedness schema domain. We found that attachment styles, schema domains, and personality beliefs could explain 7% to 32% of IPV behaviors. **Discussion:** When working with couples suffering from violence in their relationship, evaluating attachment and focusing on personality features and schemas may provide new insights to direct the therapy process. This data, supporting the role of personality beliefs and schemas, will be very useful for clinicians working with cognitive behavioral therapy or schema-therapy, which are becoming increasingly common in the field of psychiatry.

Key Words: Partner violence, attachment, personality, early maladaptive schemas

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ÖZET

Amaç: Literatür, bağlanma stillerinin, kişilik özelliklerinin, çocuklukta kötü muamelenin, bilişsel şemaların, çeşitli sosyoekonomik ve klinik sorunların partner şiddetinde önemli rol oynayabileceğini göstermektedir. Bu çalışmada, psikiyatrik tedaviye başvuran bir kadın grubunda partner şiddetinin bağlanma stilleri, şema alanları ve kişilik inançları ile ilişkisi araştırıldı. **Yöntem:** Katılımcılar, psikiyatri polikliniğine başvuran ve önceki yıl içinde partner şiddeti yaşadığını belirten 75 kadındı. Psikiyatrik değerlendirme yapıldı ve Young Şema Envanteri-Kısa Form, Kişisel İnanç Anketi-Kısa Form, Beck Depresyon Envanteri, Beck Anksiyete Envanteri, Çatışmaların Çözümüne Yaklaşım Ölçeği-2 ve Yakın İlişkilerde Yaşantılar Envanteri-II uygulandı. Partner şiddetini etkileyen değişkenleri belirlemek için korelasyon analizleri ve aşamalı regresyon analizi yapıldı. Bağlanma stilleri ve partner şiddeti arasında şema alanları ve kişilik inançlarının rolünü değerlendirmek için aracı analizi yapıldı. **Bulgular:** Partner şiddeti ile kaygılı bağlanma stili, bazı şema alanları ve kişilik inançları arasında farklı düzeylerde ilişkiler bulundu. Bireyin müzakere tutumu ile başkalarına yönelimlilik şema alanı arasında bir ilişki vardı. Bağlanma stilleri, şema alanları ve kişilik inançlarının partner şiddeti davranışlarını %7 ile %32 arasında açıklayabildiği bulundu. **Sonuç:** İlişkilerinde şiddet yaşayan çiftlerle çalışırken bağlanmayı değerlendirmek, kişilik özelliklerine ve şemalara odaklanmak terapi sürecine yön verecek yeni anlayışlar sağlayabilir. Kişilik inançlarının ve şemalarının rolünü destekleyen veriler, psikiyatri alanında giderek yaygınlaşan bilişsel davranışçı terapi veya şema-terapi ile çalışan klinisyenler için çok işlevsel olacaktır.

Anahtar Sözcükler: Partner şiddeti, bağlanma, kişilik, erken dönem uyumsuz şemalar

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INTRODUCTION

Intimate partner violence (IPV) is defined by the Centers for Disease Control and Prevention (CDC) as "physical violence, sexual violence, stalking, or psychological harm by a current or former partner or spouse", and is a serious global health issue (1). IPV is one of the most common forms of violence, affecting more than one in four ever-partnered women. It has many adverse effects on physical and mental health (2). In a recent study on general population, more than 15% of women reported experiencing IPV within the past year (2). As IPV incidents increase, studies of its relationship with many other risk factors continues (1). There is a growing body of research into risk factors for IPV that focuses on attachment styles, childhood adversity, personality features, cognitive schemas, and various other socioeconomic and clinical issues (3-5). This study investigated the relationship between intimate partner victimization (IPV-V) and intimate partner perpetration (IPV-P) and attachment styles, schemas, and personality traits. First we give the definitions of these concepts, then we describe the literature on the relationship between each factor and IPV. Within the scope of this study, the term IPV will be used to mean both exposure to violence (victimization) and to describe acting violently (perpetration).

Attachment theory, originally theorized by Bowlby, argues that negative evaluations of the self and others may lead to varying attachment styles (6). Individuals prone to avoidant attachment styles avoid emotional connections with others, hoping not to be rejected or abandoned. Those who show anxious attachment styles hold negative models of themselves and others, and demonstrate fear of the intense emotional effects of rejection and abandonment along with a stronger desire for reciprocity than individuals with secure attachment styles (6-8). Investigations of the relationship between IPV and attachment styles have shown connections with both anxious and avoidant attachment styles (3, 9). Insecure attachment styles are considered risk factors for violent behavior and also a vulnerability factor for victimization (3). It has been suggested that there may be differences in the severity and type of violent behaviors related to different attachment styles. The risk of being a victim or perpetrator may also differ in relationship to these characteristics (10). In addition, the attachment styles of both partners may lead to different effects on IPV in relationships. The interaction between partners' attachment styles can be associated with violent behavior in both men and women. For example a male partner with an avoidant attachment style may be in a relationship with a female partner who has an anxious attachment style. Under these circumstances, both of these attachment styles are likely to be associated with IPV (9). The results of the studies on the relationship between IPV victimization and anxious attachment in women are more consistent than the results of the studies between avoidant attachment style and IPV-V. Similarly, the data on the relationship between male violent behavior (IPV-P) and anxious attachment style were repeated more frequently than the data between avoidant attachment style and IPV-P (11). In addition to a direct connection between attachment styles and IPV, some other variables, such as conflict resolution styles also show a mediating effect between attachment styles and IPV. In conclusion, it is important to investigate other potential factors that may directly or indirectly impact the relationship between IPV and attachment styles.

Studies show a relationship between IPV, personality traits, and personality disorders (PD) (4,12,13). Most of the research on this topic focuses on perpetrators. A study focusing on the relationship between personality traits and IPV determined that pathological personality facets may explain up to 16% of IPV (3). The fact that, there is a difference in personality disorders between individuals referred by the court for IPV and self-referred perpetrators (a higher rate of antisocial PD among court-mandated perpetrators and a higher rate of sadistic and borderline PD among self-referred perpetrators) (4). Because PDs associated with IPV show differences based on gender, it may also be useful to investigate the relationship between personality traits and IPV in the general population (4). Personality disorders are common for perpetrators of IPV, and it has been shown that pathological personality traits have fully or partially mediating effects between attachment styles and violence (4,8). There is data providing evidence for a relationship between insecure attachment styles

and personality disorders, particularly in relationship to IPV. After controlling for the perpetrators' personality disorder, anxious attachment style directly affects psychological violence, whereas avoidant attachment style does not (8).

Another concept that has been studied is the relationship between IPV and schemas. Schemas are defined as abstract cognitive frameworks that serve as guides for problem-solving and for interpretation of information (14). Schemas affect an individual's approach to processing information in new situations. They lead individuals to select what they will perceive, shape inferences about the causes of other people's behavior, and affect relationship satisfaction. According to Young, "early maladaptive schemas" (EMSs) are self-destructive emotional and cognitive patterns that organize thoughts, memories, and bodily sensations beginning in early childhood. EMSs can be grouped into five domains: Disconnection and Rejection (DR), Impaired Autonomy and Performance (IAP), Impaired Limits (IL), Other-Directedness (OD), and Hypervigilance and Inhibition (HI) (14). Unmet core emotional needs shape EMSs, for instance insecure attachment to others, lack of autonomy and positive identity perception, an inability to express needs and emotions, lack of spontaneity, an inability to set rational limits, and lack of self-control in childhood (14). The literature includes many studies of the relationship between IPV and EMSs and shows evidence for a mediating role between EMSs, childhood maltreatment experiences, and IPV in later life (5,15). The literature also shows a relationship between insecure attachment styles and EMSs (16,17). Considering three factors together, first, the effect of attachment on the development of schemas, second, its relationship with PDs and third, the associations between schemas and personality disorders, will increase our knowledge about factors driving IPV.

Studies report a relationship between IPV and psychological symptoms, regardless of IPV type (18,19). Exposure to violence is associated with an increased incidence of depression and other psychiatric disorders, such as post-traumatic stress disorder and anxiety disorder (18). In addition, women displaying violent behavior often experience victimization and are more likely than the general population to have psychiatric diagnoses including post-traumatic stress disorder, depression, and anxiety (20). For these reasons, effective interventions for individuals involved in IPV will require examining psychopathology as a potentially important factor.

Studies in the literature have generally been carried out on male perpetrators, or female individuals staying in shelters due to victimization. Given the high frequency of IPV throughout the general population, the generalizability of data from these studies focused on specific groups, may be limited (2). Moreover, we know that some individuals experiencing IPV are not able to request help (21). In a primary health care study, women were asked if they had experienced violence. This clinic based IPV advocacy intervention for women who had experienced violence, was superior to the usual approach for reducing violence (22). Based upon this evidence, it is important to investigate IPV in women in the general population to identify and support individuals who need interventions.

Previous research has provided data about relationships between IPV and adult attachment styles, personality disorders, and EMSs (8). In the light of previous data, this study aims to investigate the relationships between IPV and attachment styles, schema domains, and personality beliefs in a treatment-seeking group of women, and examines to what extent these factors can help to explain IPV. Considering the increasing frequency of domestic violence, data examining the role of personality beliefs and schemas in IPV could be very helpful for clinicians who use cognitive behavioral therapy (CBT) or schema therapy (ST). CBT and ST are becoming increasingly common in the field of psychiatry. This study's major strength is its examination of theoretically plausible mediators in the well-established link between attachment and IPV.

METHOD

Sampling and study design

Study participants were recruited from Ankara Diskapi Yildirim Beyazit Training and Research

Hospital Psychiatry Outpatient Clinic between November 2018 and January 2020. We conducted our study in a help-seeking group of women who applied to psychiatry clinics, not directly because of IPV, but for different psychological symptoms. In this way, we aimed to increase our knowledge about individuals who do not, or cannot get help for IPV, for a variety of reasons. Since the population in our study consists of individuals who apply for help due to their psychological symptoms, this study enabled us to intervene quickly and provide assistance to individuals living with IPV. Among the participants, there were no referrals to the psychiatry clinic due to any judicial process. In order to minimize selection bias, all patients meeting the criteria for inclusion in the study were invited to participate during their examination, and information was provided about the study. Based on this, our research was designed as a predictive correlational model, a quantitative research approach. Data were collected from 82 people on a voluntary basis with convenient sampling, a non-random sampling method. During the data analysis process, most of the answers of seven people were excluded from the study as incomplete. As a result, the study consisted of 75 women seeking psychiatric treatment.

The study included women aged 18-65, literate, diagnosed with an anxiety disorder, a depressive disorder, and/or an adjustment disorder through a psychiatric examination. They also endorsed experiencing IPV within the last year. Specifically, they stated that they had been subjected to violence by their partner and/or inflicted violence on their partner. Exclusion criteria for the study included psychotic disorders, bipolar affective disorder, alcohol or substance use disorders, the presence of neurological diseases or drug use that might affect cognition, and a history of a developmental disorder or mental disability. Upon obtaining the informed consent of the individuals who agreed to participate in the study, participants completed a sociodemographic data form, psychiatric examinations were performed, and study scales were administered.

Ethical approval was obtained from the Ethics Committee of Ankara Diskapi Yildirim Beyazit Training and Research Hospital (25.09.2017-41/02). This study was carried out in accordance with the Helsinki Declaration.

Materials

A sociodemographic assessment form, the Young Schema Inventory-Short Form, the Personal Belief Questionnaire-Short Form, the Beck Depression Inventory, the Beck Anxiety Inventory, and the Experiences in Close Relationships-II were administered to each study participant. To evaluate both perpetration of violence and victimization by individuals in our study population, we used the Conflict tactics scale-2.

Sociodemographic Assessment Form: This form requests characteristics such as age, marital status, education level, working status, and mental illness diagnosis.

Young Schema Questionnaire- Short Form 3 (YSQ-SF3): This scale was developed by Young et al. and consists of 90 items rated on a 6-point Likert type scale (1=entirely untrue of me, 6 = describes me perfectly) (14). The scale consists of 18 EMSs in 5 schema domains (disconnection and rejection, impaired autonomy and performance, impaired limits, hypervigilance and inhibition, other-directedness), and higher scores indicate stronger schema features. The Turkish validation study was conducted by Soygut et al.,14 factors and five higher-order structures were found to be more consistent (23). The schema domains' Cronbach Alpha internal consistency coefficients vary between alpha=.53-.81 (23).

Conflict Tactics Scale -2 (CTS-2): CTS-2 is the most widely used and researched measure of family conflict (24). This scale was developed by Straus in 1979 and revised in 1996 by Strauss et al (25). It includes 78 items rated on a 7-point Likert type scale (0=never, 1=once, 2=twice, 3=3–5 times, 4 =6–10 times, 5 = 11–20 times, 6 = more than 20 times in the last year). There are also options that individuals can mark if the described behaviors have not been present at all in the past year or have not occurred throughout their relationship. The scale has five subscales: Negotiation, psychological aggression, physical assault, sexual coercion, and

injury. Higher scores on the negotiation scale indicate greater use of positive conflict tactics by the respondent (24). 39 items on this scale evaluate the perpetration of violence, and 39 items are related to victimization (reported partner's behavior). The single items are related to situations where the participant is the victim (the behaviors are attributed to their romantic partner) and the double items are related to the situations where the participant is the perpetrator. The Turkish validity and reliability of the scale were performed by Aba and Kulakac (2016) (26).

Personality Belief Questionnaire-SF (PBQ – SF): This scale was developed by Butler et al., and it offers statements to determine a person's core beliefs about themself, other people, and the world (27). Each question on the scale corresponds to a personality disorder (Avoidant, dependent, histrionic, borderline, passive-aggressive, obsessive-compulsive, antisocial, narcissistic, schizoid, and paranoid dimensions). It uses a 4-point Likert-type scale. The Turkish validity and reliability study of the original form of the PBQ was performed by Türkçapar et al. (2007), and internal consistency was found to be between 0.67 and 0.90 (28).

Experiences in Close Relationships-II (ECR-II): This scale was developed by Fraley et al. (2000) to measure adult attachment dimensions (29). It includes 36 items, of which 18 are for attachment-related anxiety, and 18 are for attachment-related avoidance. It is a 7-point Likert-type scale. The validity and reliability study in Turkey was performed by Selçuk et al. (2005) (30).

Beck Depression Inventory: This measure was developed by Beck et al. to measure the risk of depression and the level and severity of depression symptoms in adults (31). The scale consists of 21 items, and each item is scored between 0 and 3 points. A high total score means that the level of depressive symptoms is severe. The validity and reliability study in Turkey was conducted by Hisli (1988), and the reliability coefficient of BDI was reported as .74 (32).

Beck Anxiety Inventory: This scale was developed by Beck et al. (1988) to measure the severity of anxiety (33). It is a 21-item 4-point Likert-type self-assessment scale. A high total score means that the level of anxiety symptoms is severe. The validity and reliability study in Turkey was conducted by Ulusoy et al. (1998) (34).

Statistical analysis

Before starting this research, we did a power analysis. Since the correlations between the dependent and independent variables determined for the purpose of the study were expected to be low and moderate, a medium level was chosen for the effect size. In this context, when the effect size analysis was performed on a single sample for two independent/predictive variables, it was determined that the required minimum sample size was 68. The conditions determined for the power analysis were alpha level 0.05, beta level (second type error) 0.20, the effect size was medium, and a two-way hypothesis was chosen. The power analysis was carried out using the Gpower (version 3.1.9.7) package program.

Our data analysis used descriptive statistical measures (frequency and percentages), normality tests for the normality of measurement tools (Kolmogorov-Smirnov and Shaphiro-Wilk) and correlation analysis. Analyzes were conducted based on schema domains to minimize the number of statistical tests performed and to facilitate interpretation of the findings. A stepwise regression analysis was conducted to determine the variables that affect IPV (for each subscale of CTS-II as a dependent variable). Finally, mediator analysis was performed to evaluate the roles of schema domains and personality beliefs between attachment and IPV. The SPSS (version 25) package program was used for data analysis. An alpha level of .05 was taken to represent statistical significance.

RESULTS

Kolmogorov-Smirnov and Shapiro-Wilk tests, which are among the normality tests, were used to determine whether the scores obtained from the measurement tools used for the purpose of the study showed a normal distribution (Supplementary File - Table 1). We found that the

scores of ECR-II, two schema domains (YSQ-SF3) and six sub-dimensions of the PBQ-SF, were normally distributed. The other subscales of the PBQ-SF, three schema domains (YSQ-SF3), and CTS-2 subscales did not show a normal distribution. Accordingly, correlation analyses were performed using the Spearman rank difference correlation coefficient, a non-parametric method.

Descriptive Statistics

This study included 75 women with an average age of 37.61 ± 7.97 who reported experiencing IPV during the previous year, and 92% of these individuals were married at the time. Their mean scores on the Beck Depression Inventory were 20.96 ± 12,98, and the Beck Anxiety Inventory was 21.67 ± 15.72. The sociodemographic and clinical features of the patients participating in the study are summarized in Table 1.

Table 1. Demographic characteristics of participants.

		N	%
Education	Primary school	8	10.7
	Secondary school	18	24
	High school	23	30.7
	University or higher	26	34.6
Vocation	Not employed	39	52.7
	Civil servant	10	13.5
	Worker	25	33.8
Marital Status	Married	69	92
	Single	6	8

Correlation Analyses

Within the scope of the study, we examined the relationships between IPV, attachment styles, schema domains and personality beliefs, shown in Table 2. These data show that there are low-level relationships as well as meaningless relationships between individuals' violent behaviors toward their partners and schema areas. In particular, this table shows that the sub-dimension of negotiation is related only to the other-directedness schema domain. It also shows that the relationship of the negotiation sub-dimension to personality beliefs is statistically insignificant. Similarly, we found that the negotiation sub-dimension obtained from the answers to the CTS-II questions, evaluating violence upon individuals perpetrated by their partners, did not have a statistically significant relationship with both schema domains and personality beliefs. In the other sub-dimensions of the CTS-II scale, most relationships with schema domains and personality beliefs were found to be significant but of low impact.

When looking at the relationship between IPV and attachment styles, we found no relationship between avoidant attachment styles and any subscales of CTS-II. However, a positive correlation was found between anxious attachment styles and all subscales of CTS-II, except for the sexual coercion subscale (reported partner's behavior) and negotiation subscales (both for respondent and reported partner's behavior).

After examining correlations between the variables, a stepwise regression analysis was performed for each subscale of the CTS-II evaluating IPV separately for both perpetration and victimization. Our goal was to determine the variables affecting IPV. The main purpose of a stepwise regression analysis is to determine which variables have the most effect upon the dependent/predicted variable.

First, a stepwise regression analysis was performed to determine which variables affect perpetration behaviors. Each subscale considered as a dependent variable and a total of four models were tested and reported.

The variable that had a statistically significant

Table 3. Correlations between attachment styles and schema domains, personality beliefs, and IPV

	Anxious Attachment Style	Avoidant Attachment Style
Schema Domains	r	r
Disconnection and Rejection Domain	.699*	.252*
Impaired Autonomy and Performance Domain	.745*	.213
Impaired Limits Domain	.452*	-.209
Other-Directedness Domain	.622*	.024
Overvigilence and Inhibiton Domain	.562*	-.067
Personality Belief Questionnaire (PBQ-SF)		
PBQ-SF AVO	.600*	.086
PBQ-SF DEP	.587*	.027
PBO-SF PAS	.587*	.070
PBQ-SF OBS	.480*	.129
PBQ-SF ANT	.646*	.060
PBQ-SF NAR	.486*	.054
PBQ-SF HIS	.602*	.102
PBQ-SF SCH	.545*	.036
PBQ-SF PAR	.654*	.197
PBQ-SF BOR	.649*	.197
Conflict Tactics Scale -2 (CTS-2)		
Negotiation (Respondent)	.148	-.127
Psychological aggression (Respondent)	.420*	-.044
Physical assault (Respondent)	.466*	.093
Sexual coercion (Respondent)	.301*	.146
Injury (Respondent)	.398*	.096
Negotiation (RPB)	.036	-.150
Psychological aggression (RPB)	.370*	.083
Physical assault (RPB)	.367*	.120
Sexual coercion (RPB)	.187	.092
Injury (RPB)	.253*	.153

*p < .05. Note: AVO, Avoidant scale; DEP, Dependent scale; PAS, Passive aggressive scale; OBS, Obsessive-compulsive scale; ANT, Antisocial scale; NAR, Narcissism scale; HIS, Histrionic scale; SCH, Schizoid scale; PAR, Paranoid scale; BOR, Borderline Scale; RPB, Reported partner's behavior.

effect on the psychological aggression subscale of CTS-II was found to be an anxious attachment style (R=.47; R^2=.22; p<.05). Significantly, this explains 22% of the change in the level of psychological aggression for women (β =.47). The established regression model was found to be significant (F_{1-73} = 20.19; p < .05).

The variables that had a statistically significant effect on levels of physical assault are anxious attachment style (β = .42), avoidant attachment style (β = .22), obsessive-compulsive and antisocial personality beliefs (β = -.28 and β = .34 respectively), impaired autonomy and performance schema domain (β = -.29), and impaired limits schema domain (β = .30) (R = .57; R^2 = .32; p < .05). We determined that the significant variables altogether explain 32% of changes in levels of physical assault. While impaired autonomy and the performance schema domain and obsessive-compulsive personality beliefs are inversely proportional to physical assault, other variables are directly proportional. We found the established regression model significant (F_{6-68} = 5.39; p < .05).

The variables that have a statistically significant effect on levels of sexual coercion are anxious attachment style (β=.29), antisocial personality beliefs (β = .43) and borderline personality beliefs (β = -.30) (R = .52; R^2 = .27; p < .05). We determined that the variables that were significant together explained 27% of the change in levels of sexual coercion for these women. While borderline personality beliefs were inversely proportional to sexual violence, other variables were directly proportional. We found the established regression model significant (F_{3-71} = 8.95; p < .05).

The variables that have a statistically significant effect on injury levels appear to be anxious attachment style (β =.38), antisocial, paranoid, and passive-aggressive personality beliefs (β = .66, β = -.31 and β =-.35 respectively) (R = .55; R^2 = .30; p < .05). We determined that the variables that were significant together explained 30% of changes in levels of injury. While passive-aggressive and paranoid personality beliefs are inversely proportional to injury level, other variables are directly proportional. We found the established regression model significant (F_{4-70}=7.49; p < .05).

After determining the variables that affect the perpetration behavior of patients, we examined the variables that affect levels of victimization.

The variables that had a statistically significant effect on levels of psychological violence are anxious attachment (β=.42), obsessive compulsive and antisocial personality beliefs (β=-.28 for both) (R= .44; R^2= .20; p < .05). Significant variables together explain 20% of changes in levels of psychological violence for women who have been subjected to violence by their partner. There is an inverse correlation between obsessive-compulsive personality beliefs and psychological violence. We found the established regression model significant (F_{3-71}= 5.80; p < .05).

The variables that have a statistically significant effect on individuals' exposure to physical aggression are anxious attachment style (β=.30), avoidant attachment style (β=.19), paranoid personality beliefs (β=-.45) and antisocial personality beliefs (β=.38) (R=.41; R^2=.17; p < .05). We determined that the variables that were significant together explained 17% of the change in levels of physical aggression. While paranoid personality beliefs were inversely proportional to physical aggression, other variables were directly proportional. We found the established regression model significant (F_{4-70} = 3.63; p < .05).

The variable that had a statistically significant effect on the sexual coercion exposure of women was antisocial personality beliefs (R=.27; R^2=.07; p < .05). We determined that antisocial personality beliefs explain 7% of the change in levels of sexual coercion. We found the established regression model significant (F_{1-73} = 5.78; p < .05).

The variables that had a statistically significant effect on injuries for women who had been subjected to violence by their partners were anxious attachment style (β =.28), antisocial and paranoid personality beliefs (β = .51 and β = -.49 respectively) (R = .44; R^2 = .19; p < .05). We determined that the variables that are significant together explain 19% of changes in levels of injury. Paranoid

personality beliefs were inversely proportional to injury level, while other variables were directly proportional. We found the established regression model significant ($F_{3\text{-}71} = 5.68$; $p < .05$).

A stepwise regression analysis was conducted to determine which variables affect the negotiation subscales (both for the respondent and reported partners' behavior). We showed that the variable with a statistically significant effect on the negotiation subscale for respondents was the other-directedness schema domain ($R=.27$; $R^2=.07$; $p<.05$). The other-directedness schema domain explains 7% of the change in levels of negotiation ($\beta = .27$). We found the established regression model significant ($F_{1\text{-}73} = 5.68$; $p < .05$). The variables that had a statistically significant effect on levels of reported partners' negotiation behavior are the other-directedness schema domain ($\beta = .42$), and impaired autonomy and performance schema domains ($\beta = -.33$) ($R = .31$; $R^2 = .09$; $p < .05$). Significant variables together explain 9% of the change in levels of negotiation. While there was an inverse correlation between the impaired autonomy and performance schema domain and the level of negotiation, the other-directedness schema domain is directly proportional to the level of negotiation. We determined that the established regression model was significant ($F_{2\text{-}72} = 3.70$; $p < .05$).

We considered attachment styles as independent variables in the light of literature that describes attachment as a fundamental structure in personality and schema development, and that shows high negative predictive value of secure attachment style for personality disorders in adults (15,35,36). As a result of regression-based mediation analysis, we found that both personality beliefs and schema domains did not have a statistically mediating effect on the relationship between attachment styles and IPV.

DISCUSSION

This study investigated the relationship between attachment styles, personality beliefs, schema domains, and IPV. We found different levels of relationships between perpetration behaviors, and an anxious attachment style, some schema domains and personality beliefs. Similarly, we found relationships between individuals' victimization other than sexual coercion (psychological aggression, physical assault, and injury), and anxious attachment style, some of the schema domains and personality traits. There was a relationship between an individual's attitude toward negotiation and the other-directedness schema domain. There was no relationship between the individual's partner's reported attitude toward negotiation, and any schema domains or personality beliefs. Finally, we investigated, attachment styles, schema domains, and personality beliefs effective on IPV-P and IPV-V with a stepwise regression analysis. We found that these variables could explain between 7% and 32% of IPV behaviors

Our study found an association between an anxious attachment style and IPV (both IPV-V and IPV-P) in adulthood. On the other hand, we could not find any relationship between avoidant attachment style and IPV. According to the results of our stepwise regression analysis, we determined that anxious attachment had an explanatory effect on all IPV behaviors except the sexual coercion exposure of women, while avoidant attachment had an explanatory effect only on physical assault (both for respondent and reported partner's behavior). These results show that some relationships that cannot be detected by correlation analyses may be found by further analysis. In addition, we showed that attachment styles have an explanatory role in different IPV behaviors at different levels. Despite numerous studies showing a relationship between an anxious attachment style and IPV, there is less evidence for a relationship between avoidant attachment style and IPV. Also, the relationship between attachment styles and IPV in adulthood shows varying results related to gender and an anxious attachment style, and is a significant predictor for female victimization (10). An avoidant attachment style may affect men's behavior more than women's IPV behavior, and most studies found a relationship between an avoidant attachment style and IPV mainly in men (7,37). In line with our findings, there are data in the literature showing that an anxious attachment style in women is more often associated with perpetration than an avoidant attachment style (7,9). In fact, there is a link between an avoidant attachment style and with-

drawal behavior in conflict situations (3). Because avoidance behavior is frequent in stressful situations, individuals with an avoidant attachment style may not be clearly distinguishable in studies of attachment styles and IPV (38). Another study of college students showed a correlation between an anxious attachment style and experiencing emotional abuse in romantic relationships (39). The fact that our study included only women patients may have affected our findings.

In our study, in line with the literature, we found that there were different levels of positive correlations between individuals' perpetration and victimization (IPV), and schema domains and personality beliefs (4,5,12,13). In our study, the disconnection and rejection schema domain and hypervigilance and inhibition schema domains were associated with all violent behaviors (IPV-P) except sexual coercion. The impaired autonomy and performance schema domain and the other-directedness schema domain were associated with all violent behaviors (IPV-P). The impaired limits schema domain was associated with physical assault and injury behaviors. On the other hand, when we considered victimization (IPV-V) we found that all schema domains except the hypervigilance and inhibition schema domain were associated with the individual's exposure to physical assault. The impaired limits schema domain is also associated with injury, and the other-directedness schema domain is associated with psychological aggression exposure.

Gay et al. determined that only the disconnection and rejection schema domain plays a mediator role in the relationship between early childhood emotional abuse and IPV-V (5). They also report that they obtained data supporting the use of schema therapy when victimization was present in women with a history of emotional abuse (5). In their research on the relationship between child abuse and IPV-V, Atmaca et al. found that only the disconnection and rejection schema domain was important and mediated the association between these parameters (15). Corral et al., on the other hand, looked at the relationship between personality traits and schemas in IPV perpetrators (IPV-P) (13). They reported that EMSs should be addressed in treatment programs for perpetrators as a result of relationships they found between narcissistic, borderline, antisocial and paranoid personality disorder traits, and different schema domains (13). In our study, the relationships between schema domains and different types of IPV behavior may be because our research differs from that of other studies that focused on the mediator role of EMSs rather than direct relationships. However, our findings support a relationship between IPV and schemas, similar to previous studies.

One critical issue when considering relationships between schema domains and IPV are coping attitudes. According to Young et al., although they have the same schemas, individuals' expressive behaviors may differ due to different coping attitudes (schema surrender, avoidance, overcompensation) (14). Therefore, while we expect a relationship between the other-directedness schema domain and negotiation, this schema domain is also associated with all violent behaviors (IPV-P), and some types of IPV-V (partner's psychological aggression and physical assault behaviors) may seem strange at first glance. However, individuals over-compensating for their schemas may exhibit behaviors that are exactly contrary to their schemas. Investigating characteristics like schema coping attitudes may be useful.

We noted that only the impaired autonomy and performance schema domain and impaired limits schema domains significantly affected levels of physical assault (IPV-P). According to Young et al., individuals endorsing impaired autonomy and performance schema domains have difficulty forming their identities, and establishing their lives and competence (14). Individuals endorsing the impaired limits schema domain did not feel the need to follow the rules applied to others, to consider others, or to develop self-control as a child. As a result, we expect that having insufficient internal boundaries around self-discipline and reciprocity will be associated with violent behavior. No other schema domains were found to be effective in stepwise regression analyses for IPV.

Many personality traits were positively associated with perpetration (IPV-P). On the other hand,

when we examined the relationship between victimization (IPV-V) and personality traits, we found limited and weak relationships. As a result of our stepwise regression analysis, we determined that an individual's antisocial personality traits were related to exhibiting physical assault, sexual coercion and injury behaviors. Obsessive-compulsive features might increase the likelihood of performing physical assault. Borderline personality traits were associated with an increased risk of engaging in sexual coercion, and paranoid and passive aggressive personality traits might increase the likelihood of displaying injury behavior. When individual's victimization is considered (IPV-V), an individual's antisocial personality traits were associated with higher likelihood of experiencing violent behaviors from her partner (psychological aggression, physical assault, sexual coercion and injury). An individual's paranoid personality traits were associated with higher likelihood of experiencing physical assault from her partner and an individual's obsessive-compulsive personality traits were associated with higher likelihood of being exposed to psychological aggression from her partner. Related to our study design we can not make any suggestions about the causal relationships between these variables and our analysis can provide only an estimation of the relationships between them. In the light of our findings, we may say certain personality dimensions are related to violence exposure, some personality traits in women may make the individual vulnerable to interpersonal violence. Another important issue to consider when interpreting our results is gender. Gender is an important factor related to violent behaviors (40,41). Factors associated with IPV-V of women is often framed within the context of gender inequality and power relations (40). Problems experienced in relationships due to the personality traits of partners can be considered as a conflict issue in relationships. There are study results confirming that gender effects conflict-solving styles and ways of coping with violence and promoting gender equality is a crucial component of violence prevention (40,41). From this point of view, a woman with paranoid personality traits can easily experience her partner's repression because of her behaviors or statements related to this trait. In contrast, a woman is more likely to surrender to her partner's expectations and even some restrictions about her life related to his personality traits because of the inequality of power.

The literature previously showed a relationship between IPV and personality disorders (4,8,12,13). One study evaluated the personality traits of individuals convicted of violence against their spouse, and, similar to our results, most of these individuals demonstrated disordered personality characteristics like narcissistic, obsessive-compulsive, paranoid, antisocial, and histrionic traits (13). In studies investigating personality characteristics associated with IPV, antisocial personality traits were most frequent in males, while borderline personality traits were most common for females, and antisocial personality traits were the second most common (4). One study, which examined antisocial processes (psychopathic features) in adolescents, found a relationship between victimization experiences and antisocial behavior in girls (42). The results of these studies may indicate that antisocial behavior is an important element, both in committing violence and exposure to violence. In accord with our findings, data in the literature also show antisocial and borderline personality traits frequently related to IPV-P and attachment styles (8,37). Again, a study investigating the mediating role of antisocial and borderline personality traits with attachment and IPV-P found that antisocial personality traits had a full mediating effect on an avoidant attachment style and IPV-P, and partial mediating effects with an anxious attachment style and IPV (8). It is interesting that our study showed paranoid personality beliefs have a relationship with reduced likelihood of experiencing physical assault and injury. This may be explained by the fact that individuals who perceive a high risk of being harmed by others may develop behavioral patterns to protect themselves. Individuals with obsessive-compulsive beliefs, on the other hand, are overly concerned about behaving correctly and not making any mistakes, and this attitude could also protect them from victimization. We recommend more investigation of these relationships.

Our study found a relationship between individuals exhibiting an attitude of negotiation towards their partners and the schema domain of others-directedness. While most studies on IPV only focus on victimization or perpetration behaviors, our use of

CTS-II enabled us to obtain data on attitudes toward negotiation. In our stepwise regression analysis, we saw that the other-directedness schema domain might increase the likelihood of displaying negotiation attitude in individuals and their partner's. We also determined that a person's impaired autonomy and performance schema domains were associated with higher likelihood of experiencing negotiation attitudes from that person's partner. According to our results, as autonomy and performance schemas increased, the partner's attitude toward negotiation decreased. The relationship between attitudes toward negotiation (both for the individual and her partner) and the other-directedness schema domain is clear. According to Young et al., individuals endorsing other-directedness schema domains are more focused on meeting the needs of their partners than on their own needs (14). They may hope to gain approval and maintain emotional connection or avoid negative reactions with other-directed behaviors. This schema domain consists of subjugation, self-sacrifice, and approval-seeking schemas. Individuals in this type of relationship with their partner may not be aware of their anger and instead focus on the other individual's reactions. They may suppress their own emotions to avoid being abandoned. In this way, this schema may have an impact on negotiation behaviors (14). Individuals with impaired autonomy and performance schema domains believe they can not handle daily responsibilities without help and may be extremely dependent. This may affect their partners negatively and make the partner show less openness to negotiation towards them.

The literature describes a variety of therapeutic interventions for IPV. Cognitive behavioral therapy has a positive effect on changing personality beliefs, and our study has shown that personality beliefs affect IPV. In addition, considering our data on attachment and schemas, schema therapy interventions show promise, though more evidence must be gathered. (5,13,15).

Limitations

There are some limitations to our study. First, our sample size is small. Second, the cross-sectional nature of our study prevents us from making definite suggestions about causation for IPV. A third limitation is that our study was conducted only with women. The effects of attachment styles on violent behavior in adults may differ by gender. Fourth, we investigated attachment styles in only two dimensions (avoidant and anxious) instead of four. Another limitation is the lack of an evaluation of secure attachment in our study. Also, ECR-II (the attachment scale used in our study) evaluates attachment within the context of romantic relationships. We used a self-report scale and not an interview-based approach, which could be another limitation. On the other hand, ECR-II is recommended because it measures adult attachment styles with higher measurement sensitivity than other scales. Using self-rating scales and omitting a social desirability scale make it impossible to ignore the possibility of bias in participant responses. Although our data provide new information about the group of treatment-seeking women, results can not be generalized to more typical community samples. Finally, since there was no control group in this study, we cannot claim that the data obtained are related only to individuals who experience intimate partner violence. However, it should be noted that there is often no control group in studies on IPV in the literature.

CONCLUSION

The findings from our research indicate statistically significant associations between IPV and attachment styles, personality features, and schema domains in a group seeking help due to different psychological symptoms not directly related to IPV. Considering the widespread prevalence of IPV in the community and the inability of some individuals to seek help for this problem, it is important to address this issue with individuals who apply to psychiatry outpatient clinics. Unlike populations of healthy individuals, victims of violence, or violent criminals in the literature, the study we carried out in this clinic sample provides valuable findings beyond previous data. It shows significant effects of attachment styles, personality features and schema domains on IPV. When working with couples suffering from violence in their relationships, evaluating attachment and addressing personality traits and schema domains as dimensions for intervention may be useful in the therapy process. Our

study shows that these variables have explanatory effects of up to 30% on IPV.

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Comparison of executive functions in attention deficit hyperactivity disorder, obsessive compulsive disorder and pathological internet use in children and adolescents

Dikkat eksikliği hiperaktivite bozukluğu, obsesif kompülsif bozukluk ve patolojik internet kullanımı olan çocuk ve gençlerin yürütücü işlevlerinin karşılaştırılması

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SUMMARY

Objective: Prevalance of pathological internet use (PIU) is increasing in children and adolescents. Although it has multifactorial etiologies, some symptoms are considered as impulsive whereas some are compulsive in nature. This study is aimed to compare individuals having PIU with attention deficit hyperactivity disorder (ADHD) and obsessive compulsive disorder (OCD) which have more specific findings in terms of executive functioning. **Method:**Participants (n=104) of this study were 8-18 years-old-aged right-handed, drug-naive children and adolescents with IQ>85, and were grouped into 4 groups: ADHD, OCD, PIU and healthy control (HC). They are assessed with K-SADS, Yale Brown Obsessive Compulsive Disorder Scale, Young Internet Addiction Scale and Turgay Disruptive Behavior Scale-ADHD. STROOP test, Wisconsin Card Sorting Test (WCST), Judgement of Line Orientation (JLO) and Visual-Aural Digit Span Test (VADST) were used as neuropsychological (NP) tests. **Results:**Study sample was composed of 13 (12.5%) girls and 91 (87.5%) boys with a mean age of 11.5±2.7 years old. PIU group had the lowest scores in STROOP time and the highest scores in BLOT and VADST tests(p>0.05). ADHD group has the lowest scores in JLO and VASDT- auditory verbal, visual-verbal and visual-written subtests (p<0.05) Groups were similar in WCST completed category, conceptual response and scores. ADHD group had the highest scores in WCST perseverative responses and errors (p>0.05). **Discussion:**Executive function abnormalities are more specific for ADHD cases rather than PIU and OCD. However, shorter response time in PIU group suggests that online games and other internet use may increase the speed of information processing. Visual content of internet might cause PIU group to score better in short term memory, visual perception, visual memory and orientation tests. NP profile of the PIU resembles OCD group than ADHD group suggesting that PIU cases with no comorbid conditions might have same neurobiology as OCD.

Key Words: Attention deficit hyperactivity disorder, obsessive compulsive disorder, Pathologic internet use

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ÖZET

Amaç: İnternet bağımlılığı(İB) sıklığı çocuk ve ergenlerde giderek artmaktadır. Etiyolojisi multifaktöryel olmakla birlikte bazı belirtileri impulsivite, bazı belirtileri kompülsivite olarak ele alınmaktadır. Bu çalışmanın amacı dikkat eksikliği hiperaktivite bozukluğu (DEHB) ve obsesif kompülsif bozukluk (OKB) ile patolojik internet kullanımı (PİK) olan grupların yürütücü işlevler açısından karşılaştırılmasıdır. **Yöntem:** Çalışmaya 8-18 yaş arası, sağ el dominant ve ilaç kullanmayan, IQ>85 olan çocuk ve ergenler (N=104) DEHB, OKB, PİK ve sağlıklı kontrol olarak 4 grup şeklinde katıldı. Olgular K-SADS yarı-yapılandırılmış tanısal görüşme, Yale Brown Obsesif Kompülsif Bozukluk Ölçeği, İnternet bağımlılığı Ölçeği ve Turgay DSM-IV-DEHB ölçeği ile değerlendirildi. Nöropsikolojik(NP) testler olarak STROOP renk-kelime testi, Wisconsin Kart Eşleme Testi(WKET), Çizgi Yönünü Belirleme Testi(ÇYBT) ve Görsel İşitsel Sayı Dizileri Testi (GİSDT) uygulandı. **Bulgular:** Örneklem yaş ortalaması 11,5±2,7,13(%12,5) kız,91(%87,5) erkek içermekteydi. PİK grubu tüm STROOP alt testlerini en kısa sürede tamamlamıştır(p>0,05). ÇYBT için en çok doğru yanıtı veren PİK grubu (p>0,05), DEHB ise en düşük veren gruptur(p<0,05). GİSDT tüm alttest puanları PİK için en yüksek değere sahipken(p>0,05), GİSDT/ işitsel-sözel, görsel-sözel ve görsel-yazılı alttest puanları DEHB grubunda düşüktür(p<0,05). WKET tamamlanan kategori sayısı, kavramsal tepki puanı ve kurulumu sürdürme puanı açısından gruplar arasında anlamlı fark yokken, WKET Toplam perseveratif tepki ve hata ise DEHB grubunda fazladır (p>0,05). **Sonuç:** Yürütücü işlev bozuklukları OKB veya PİK grubuna göre DEHB tanısı için daha spesifiktir. Ancak tepki süresinin PİK grubunda daha kısa olması; çevrimiçi oyun ve diğer programların çocukların bilgi işlemleme hızına etki ettiğini gösterebilir. İnternetin görsel içeriği, PİK grubunun görsel algılama, hatırlama ve yönlenim ile ilgili testlerde daha başarılı olmalarına neden olmuş olabilir. PİK grubunun NP profili DEHB grubu ile kıyaslandığında OKB grubuna benzemektedir. Komorbiditesi olmayan PİK olguları OKB grubuna benzer nörobiyolojiye sahip olabilir.

Anahtar Sözcükler: Dikkat eksikliği hiperaktivite bozukluğu, Obsesif kompülsif bozukluk, Patolojik internet kullanımı

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INTRODUCTION

Internet addiction (IA) is defined by excessive or poorly controlled preoccupations, impulses or behaviors regarding computer use and internet access for games, shopping or social media issues, which causes impairment or distress in the individual's life (1). Internet addiction or pathological internet use (PIU), is classified as a behavioral addiction and has been increased among whole age groups especially in children and adolescents. The rates are increasing after smart phones which provide internet continuously. Also there has been an enormous increase of internet use due to the lockdowns and isolations because of the outbreak of coronavirus (2).

The number of internet game players reached to 1.8 billions worldwide (3). Similar to this high rates, in Turkey the prevalance of internet-computer addiction in high school level youth was found 4.5-16% (4,5). In another study conducted among middle school aged children in Turkey, the rate of internet addiction in general group and high group was 2.33% and 17.45% consecutively (6). In the 5th edition of Diagnostical and Statistical Manual of Mental Disorders (DSM-5) (APA 2013) (7), excessive internet use is not classified as an addiction therefore researchers have started to use pathological or problematic internet use as a term more commonly. Recent Chinese study reported that the internet addiction among high school children is 13.4 % and male gender, depression, stress and insomina were revealed as risk factors for IA (8).

The etiopathogenesis of pathological internet use (PIU) is multifactorial and the neurobiological mechanisms havenot been clarified. Orbitofrontal cortex, anterior cingulate cortex, posterior cingulate cortex and dorsolateral prefrontal cortex and altered gray matter volume are found to be responsible neuroanatomical areas (9,10).

Attention deficit hyperactivity disorder (ADHD) and obsessive compulsive disorder (OCD) are common childhood psychiatric disorders. Deficits in inhibitory control mechanisms have been reported as shared characteristics between ADHD, OCD and PIU. Controversies about the diagnostic classification of IA are still present. Some authors put the IA into impulse control disorders whereas some classify it in the OCD related disorders (3,11). As a clinical point of view these three disorders are very different from each other. However they share the common pathway which is the corticothalamostriatal tract (12).

Executive functions are higher cognitive functions including; planning, organization, self regulation, flexibility, response inhibition and completing goal oriented behaviors, attention focusing and working memory. In order to understand the neuroanatomic and neurofunctional correlates of psyhciatric disorders, researches on neuropsychological tests have been increased recently (13). Abnormalities in executive functions have been showed in youth with ADHD and OCD so far (9,13-17). However research on neuropsychological assessments of PIU is still lacking. Some studies showed that IA has some common symptoms with OCD such as uncontrolled repetitive behaviors and similar executive functions like diminished cognitive flexibility (8).

Here we aimed to enlighten the etiology of pathological internet use with neuropsychological measures and compare the results with ADHD and OCD and with healthy population. Attention, memory, impulsivity and compulsivity are aimed to be evaulated in terms of pathophysiology.

METHOD

Participants

Study sample consisted of 8-18 years old right-handed children physically healthy with normal cognitive functioning (IQ>85), without any vision or hearing anomalies, any mental retardation or autism spectrum disorders who have been following in the 3rd reference of child psychiatry outpatient with pure diagnoses of ADHD, OCD and PIU and classified into 3 groups. Healthy control group was the same age and sociodemograpic group with no physical or psychiatric disorders. The sample size was calculated according to power analysis and at least 25 patients for each groups were needed (17). Totally 104 individuals (26 for each group)

were gathered into this study.

Measurements

Sociodemographic data form: This form was produced by the authors. It was administered by the clinicians and based on the parent report and direct clinical observation. This form was composed of a detailed developmental history, as well as history of behavioral, emotional and physical problems if present. Detailed medical history internet use was obtained. Daily use of internet, durations on internet were assessed. Computer or smart phone use, purpose of the internet use (shopping, fun etc.) and ways of the use were asked in the form.

The Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS): K-SADS is a semi-structured DSM-IV interview aimed at early diagnosis of affective disorders such as depression, bipolar disorder, and anxiety disorder. Clinical diagnosis of OCD and ADHD were also done by this interview. Turkish adaptation was completed by Gokler et. al and it is a valid and reliable test used commonly. (18).

Internet Addiction Test (IAT): This test was developed by Young and commonly used worldwide. It is a 5 point Likert scale with 20 questions. The higher score represents the higher compulsivity and addiction. Young suggests that total scores between 31 and 49 show the presence of a mild level addiction, 50 to 79 represent the presence of a moderate level, and scores of 80 to 100 indicate a severe dependence (19). In this study we defined the pathological internet users who had scores higher than 50 which is used as a cut-off in Turkish version of this test (20).

Children's Yale–Brown Obsessive–Compulsive Scale (CY–BOCS; Scahill et al., 1997): The CY–BOCS is a semi-structured clinician-administered interview. The clinician can get obtain severity scores of obsessions, compulsions and total scores. It is valid in Turkish (21).

Turgay DSM-IV-Based Child and Adolescent Disruptive Behavioral Disorders Screening and Rating Scale (T-DSM-IV-Scale)-parent form (T-DSM-IV-S): It was developed by Turgay and translated and adapted into Turkish and it is based on the DSM-IV diagnostic criteria and assesses hyperactivity/ impulsivity (9 items), inattention (9 items), opposition/defiance (8 items), and conduct disorder (15 items) (22,23).

Neuropsychological Tests: In this study, manual form of the NP tests which have the Turkish reliability and validity are used (24).

STROOP test: This test measures the frontal lobe functions including focused attention, selective attention, response inhibition, speed of information processing .

Wisconsin Card Sorting Test (WSCT): This test also measures the frontal lobe functions especially executive attention, working memory, perseveration, conceptualization and abstract thinking.

Judgement of Line Orientation Test (JLOT): This test provides information about the visual perception an orientation which are accepted as parietal lobe and right hemisphere functions (25).

Visual-Aural Digit Span Test (VADST): This test measures the short term memory,working memory and attention. It gives information about the functioning of hippocampus ad prefrontal cortex.

Procedure

All study groups had the psychiatric assessment and NP tests. Psychiatric assessment was conducted by experienced child psychiatrists based on DSM-5 (APA 2013) diagnostic criteria and also with K-SADS. All measures including sociodemographic data form, IAT, CY-BOCS and T-DSM-IV-S were also filled out prior to assessment. After psychiatric assessment; neuropsychological (NP) test appointments were given for the following days in order to decrease the negative effects of tiredness on cognition. The NP tests were done by the NP testing certified author (SK).

Ethics

Ethical approval was obtained from the Local Institutional Review Board of Ethics. It is imperative to note that the study was carried out according to the Declaration of Helsinki Human Rights.

Statistical analysis

Data analysis was conducted by way of computer based statistics software (SPSS 24.0, SPSS Inc., Chicago, IL, USA). All data was evaluated by Kolmogorov-Smirnov for checking the normal distribution. Through this software, descriptive statistics including the means and ratio intervals were calculated. The study groups were primarily divided into 4 subgroups. ANOVA and Pearson Corelation Tests were used for parametric variables whereas Kruskal Wallis H and spearman correlation tests were used for nonparametric variables. For binary comparisons Bonferroni correction, Tukey, Tamhane and Mann Whitney U tests were used. Type I error level was defined as 0.05.

RESULTS

Mean age of the participants was 11.47±2.7 (minimum 8-maximum 17 years old). Most of the participants were male (87.5%) and they were at the primary level of education. Characteristics of the groups are shown in the Table 1.

All groups were similar in terms of the subjects' age (Kruskal Wallis test (KWT): 4,692; p=0.196), maternal age (KWT=0.733, p=0.865), paternal age (KWT:1.516, p=0.679) and number of siblings (KWT: 5.660, p=0.129).

Type of the internet use was checked among the PIU patients and the most common type was online games (53.8%). Other choices for the internet use were; social media websites (26.9%), online chat and texting (15.4%) and web surfing (3.8%).

Table 1. Characteristics of the study groups

Characeristics		ADHD (n=26)		OCD (n=26)		PIU (n=26)		HC (n=26)		Total (n=104)	
		N	%	N	%	N	%	N	%	N	%
Age group	8-12	19	73.1	9	34.6	13	50.0	9	34.6	50	48.1
	12-18	7	26.9	17	65.4	13	50.0	17	65.4	54	51.9
Gender	Female	6	23.1	3	11.5	1	3.8	3	11.5	13	12.5
	Male	20	76.9	23	88.5	25	96.2	23	88.5	91	87.5
Education	Primary school	14	53.8	10	38.5	7	26.9	13	50.0	44	42.3
	Middle school	10	38.5	11	42.3	10	38.5	8	30.8	39	37.5
	High School	2	7.7	5	19.2	9	34.6	5	19.2	21	20.2

ADHD: Attention Deficit Hyperactivity Disorder, OCD: Obsessive Compulsive disorder, PIU: Pathological Internet Use, HC: Healthy Control

Neuropsychological Test Scores

Table 2 shows the overall results and comparison of the NP tests of the study groups.

STROOP tests: Pathological internet users had the shortest time of responses in all STROOP subtests. This group showed significantly shorter time than the ADHD group in the STROOP1 task and the OCD group in the STROOP3 task. Also for the STROOP 5 task, PIU group had significantly lower scores comparing to ADHD groups (Kruskal Wallis test, p>0.05).

Table 2: Comparison of the neuropsychological test results among the study groups

Tests	ADHD (n=26)			OCD (n=26)			PIU (n=26)			HC (n=26)			F/KWT	p
	M	SD	%95 CI	M	SD	%95 CI	M	SD	%95 CI	M	SD	%95 CI		
STROOP 1	12.56	1.72	11.86-13.25	11.50	1.61	10.85-12.15	10.15	2.07	9.32-10.99	11.71	2.05	10.88-12.54	-/17.214	0.001
STROOP 2	12.73	2.20	11.84-13.62	12.65	2.30	11.73-13.58	10.00	1.85	9.25-10.75	12.54	3.06	11.29-13.78	-/21.897	<0.001
STROOP 3	18.00	3.10	16.75-19.25	18.42	2.98	17.22-19.63	14.88	3.72	13.38-16.59	17.77	5.24	15.66-19.89	-/15.767	0.001
STROOP 4	26.85	6.73	24.13-29.57	26.54	4.95	24.54-28.54	21.65	10.20	17.53-25.77	27.15	8.14	23.86-30.44	-/19.713	<0.001
STROOP 5	43.85	8.38	40.46-47.23	40.92	5.24	38.81-43.04	34.69	13.71	29.15-40.23	43.03	9.74	39.09-46.96	-/23.412	<0.001
JLOT	18.54	4.29	16.81-21.27	22.00	3.11	20.74-23.26	22.42	3.85	20.87-23.98	22.12	2.99	20.90-23.33	6.705/-	<0.001
VADST-Auditory Verbal	4.00	0.80	3.68-4.32	5.12	1.07	4.68-5.55	4.81	1.13	4.35-5.26	4.77	0.99	4.37-5.17	-/15.873	0.001
VADST-Auditory-Written	3.88	0.65	3.62-4.15	5.12	1.14	4.65-5.58	4.69	0.88	4.34-5.05	4.54	0.99	4.14-4.94	-/19.716	<0.001
VADST-Visual-Verbal	3.83	0.73	3.55-4.14	5.00	1.20	4.52-5.48	5.08	1.47	4.48-5.67	4.73	1.04	4.31-5.15	-/17.564	0.001
VADST-Visual-Written	3.73	0.78	3.42-4.04	4.88	1.03	4.47-5.30	4.92	1.23	4.43-5.42	4.46	0.95	4.08-4.84	-/20.731	<0.001
WCST: Cpmpleted categories	3.46	1.33	2.92-4.00	3.54	1.27	3.02-4.05	3.69	1.32	3.16-4.23	3.92	1.35	3.38-4.47	-/1.482	0.686
WCST: total perseverative response	41.31	20.27	33.12-49.49	31.77	15.74	25.41-38.13	29.15	17.68	22.01-36.29	26.62	15.54	20.30-32.93	-/8.228	0.042
WCST: Perserverative Errors	30.88	15.21	24.74-37.03	20.35	11.52	15.69-25.00	23.62	15.53	17.34-29.89	18.27	13.35	12.88-23.66	-/9.451	0.024
WCST: Conceptualization	63.38	14.46	57.54-69.22	67.04	12.08	62.16-71.92	68.54	14.85	62.54-74.54	67.77	14.09	62.08-73.46	0.700/-	0.554
WCST-Set-maintenance	1.58	1.10	1.13-2.02	1.27	1.25	0.76-1.77	1.23	1.11	0.78-1.68	1.50	1.10	1.05-1.95	-/2.174	0.537

M: Mean, SD: standard deviation, 95% CI: confidence interval, F: ANOVA; KWT: Kruskal Wallis Test
ADHD: Attention Deficit Hyperactivity Disorder, OCD: Obsessive Compulsive disorder, PIU: Pathological Internet Use, HC: Healthy Control
JLOT: judgement of line orientation test, VADST: Visual Aural Digit Span Test, WCST: Wisconsin Card sorting Test

Judgement of Line Orientation Test:Although the mean of the correct responses was the highest in the PIU group, the difference was not significant, whereas the ADHD group showed the significant lowest score. The mean of the JLOT scores are as follows; 22.4 for PIU, 22.0 for OCD and 22.1 for HC and 18.5 for ADHD group.

*Visual Aural Digit Span Test:*The lowest scores were obtained form the ADHD group and the highest scores were obtained from the PIU group.

VADST/auditory-verbal: The significant differences were noted in OCD and ADHD groups, the scores in a descending order are; OCD>PIU>HC>ADHD.

ADHD groups showed significant differences in VADST/ auditory-written, VADST/visual-verbal and VADST/visual-written scores.

Wisconsin Card Sorting Test: There were not any significant differences among the 4 groups for the completed category, conceptualization and set maintenance subtests in WCST.

Scores in conceptualization subtest of WCST were in this order; PIU> HC> OCD > ADHD. Mean number of completed category was highest in the HC and it was the second highest in the PIU group.

Perseverative responses and perseverative errors were significantly different in the ADHD group. Perseverative responses scores were: ADHD> OCD> PIU> HC and whereaas perseverative errors were ADHD>PIU>OCD>HC. The perseverative profiles of PIU group were similar to OCD groups rather than HC and ADHD.

Correlations of sociodemographic and clinical features with neuropsychological functioning were evaluated and shown in the Table 3. Data of one of the mothers and one of the fathers were absent since they were dead.

Table 3: Correlates of sociodemographic and clinical features on the neuropsychological functioning

TESTS	Age n=104	Sibling number n=104	Maternal age n=103	Paternal age n=103	ADHD/IA n=26	ADHD/HA n=26	ADHD/Combined n=26	CY-BOCS n=26
STROOP 1	-0.629**	0.069	-0.293**	-0.173	0.225	0.279	0.327	-0.046
STROOP 2	-0.504**	0.094	-0.269**	-0.166	0.208	0.162	0.257	-0.018
STROOP 3	-0.532**	0.003	-0.279**	-0.171	0.023	0.011	-0.045	0,129
STROOP 4	-0.496**	0.011	-0.257**	-0.155	0.004	0.016	-0.044	0.089
STROOP 5	-0.578**	0.062	-0.238*	-0.128	0.050	0.092	0.027	-0.235
JLOT	0.646**	-0.034	0.242*	0.111	-0.013	0.023	0.004	0.156
VADST-Auditory-Verbal	0.685**	0.025	0.279**	0.268**	-0.096	-0.164	-0.223	0.024
VADST-Auditory-Written	0.567**	0.007	0.238*	0.221*	-0.122	0.096	-0.013	0.122
VADST-Visual-Verbal	0.698**	0.007	0.230*	0.182	-0.083	0.168	0,006	0.009
VADST- Visual-Written	0.699**	-0.027	0.171	0.201*	0.040	-0.364	-0.255	0.066
WCST: Completed categories	0.701**	-0.047	0.333**	0.213*	-0.271	0.087	-0.082	-0.191
WCST: total perseverative response	0.559**	0.164	-0.218*	-0.090	0.331	0.270	0.337	0.144
WCST: Perserverative Errors	0.542**	0.152	-0.205*	-0.083	0.385	0.351	0.470	0.100
WCST: Conceptualization	0.486**	-0.056	0.262**	0.093	-0.148	-0.267	-0.318	-0.101
WCST: set maintenance	0.541**	-0.048	-0.102	-0.064	-0.101	-0.222	-0.190	0.149

*p<0.05 **p<0.01 (Pearson correlation test was used if both of the variables were normally distributed, if not Spe correlation was used)

ADHD: Attention Deficit Hyperactivity Disorder, OCD: Obsessive Compulsive disorder, PIU: Pathological Internet Use, HC: Healthy Control, JLOT: judgement of line orientation test, VADST: Visual Aural Digit Span Test, WCST: Wisconsin Card Sorting Test, ADHD/IA: Scores from inattention section from the Turgay Child and Adolescent Disruptive Behavioral Disorders Screening and Rating Scale, ADHD/HA: Scores from hyperactivity-impulsivity from the Turgay Child and Adolescent Disruptive Behavioral Disorders Screening and Rating Scale, ADHD/T: Total Scores from the Turgay Child and Adolescent Disruptive Behavioral Disorders Screening and Rating Scale, CY-BOCS: Scores from the Children's *Yale Brown Obsessive Compulsive Scale*_IAT: Scores from internet addiction test, Age of the participants is significantly correlated with the all NP tests. It is poorly correlated with Stroop 4 and WCST conceptualization tests (r<0.5) whereas moderately (0.5<r<0.69) (p<0.05). Scale scores and NP tests are very poorly and insignificantly correlated.

DISCUSSION

Internet use is an inevitable behavior of our current lifestyle. Internet use can be classifed as general or special use, also pathological and nonpathological use. Through the pandemic of COVID-19, internet use has been seriously increased (2,26) and unfortunately children and youth have the highest risk for addiction and their developing brains are susceptible to the damage of internet over use. From the developmental view; pediatric population is especially vulnerable due to their lower capacity of behavioral control, overt seeking for pleasure and their immature brain structure. There is no approved treatment modality for the pathological internet use (PIU). Treatment options are developed depending on the nature of the disease (8). Current data about the etiology of the PIU is still lacking. In this study, we compared children with the ADHD and OCD in terms of PIU in order to identify the neuropsychological etiology. In our study we found that the youth spent their time with online games in the first place and the social media in the second place. Gaming disorder is a type of PIU which researcher must investigate seperately. This may be resulted form the gender of the population or the referral pattern of the parents Boys play more internet games than girls (27). Parents of our study group had identified internet addiction

tendency more easily with observing gaming pattern of children rather than their use of social media, this would be an explanation. Boys spend more time on games and girls spend more time on social network (28). Sex and corresponding risk factors for internet addiction and gaming disorder is underresearched. But male gender is reported as a risk factor in Chinese study (8).

In our study the ADHD group showed bad scores in STROOP and WCST tests, which is relevant with the literature (29,30). Stroop scores of our PIU group were better than ADHD and OCD group. This might result from the proper timing of PIU group because of their responses in video games. We know that addiction is a pathology of nucleus accumbens, where as ADHD is a prefrontal lobe dysfunction. So, our data is consistent with the previosu neurological findings. Homack and Riccio and Parsons et. al reported that Stroop Color-Word test is an indicator of prefrontal functioning and Stroop 5 is a function of nondominant hemisphere frontal lobe activation (29,31).

Our PIU group has showed better results in Stroop tests comparing to ADHD and OCD group. Stroop Color-Word test shows prefrontal pathologies whereas Stroop 5 scores Show nondominant hemisphere frontal activation (29,31).

Our PIU group has showed significant differences in WCST perseverative errors. WCST perseverative response rates were the highest in ADHD group. This also shows that WCST test measures executive functions which is dysfunctional in ADHD group. (2,29,30).

In our study PIU group didnt show significant differences in WCST perseverative responses but showed more perseverative errors. Second highest perseverative responsenses were seen in OCD group. Neuropsyhological tests specific for executive functions are mostly disturbed in ADHD group. (32). Therefore endophenotypes for ADHD are executive functions. In literature the data on executive functions in OCD are inconsistent.

In our study our OCD group showed similar results with the healthy control group like previous data given by Ornstein et al. (16). We found no difference in short term memory tests such as digit span test as previously reported results of Sawamura et al. (33). In our study NP test profile of PIU group was similar to the OCD group. Gao et al. (8) reported that there are some overlaps between the symptomatology of OCD and IA in adolescents. Compulsive mail/website checking, uncontrolled social media use, excessive online buying and cyberhoarding are also classified as pathological internet use and obsessive compulsive related disorders (33).

Dong et al (34). reported that male individuals with internet addiction problems had more prolonged reaction time and more errors in color-word test. In contrast, reaction time of our sample was lower than that of the controls. This finding may be partly related with a relatively shorter time reaching the reward and a possible deficit in waiting for the longer outcomes (36).

Our findings on judgement of line orientation test revealed that PIU group had the highest scores. This may be interpretteted as PIU is associated with visual-spatial and orientation problems which reflects more intact parietal and right hemisphere functions (36). Although healthy controls were not different from OCD group, both of them had higher scores than ADHD group. In the OCD group, visual processing scores were within normal range, as reported in previous studies (37,38).

In our study, ADHD group had lower scores on JLOT, which is in parallel with Parson et al (31). On the contrary, Schafer ve Semrud-Clikeman (39), reported that children with ADHD had visual perception problems leading to social skill deficit but they didnot find any significant diffe-rences in social problems with the JLOT scoring. Therefore further studies related with visual perception and PIU are needed.

Working memory deficits are among the core endophentypes of ADHD (40). VADST is one of the tools to examine working memory. In the present study, VADST scores found to be impaired in ADHD group but not in PIU. Children with PIU were not found to have a significant difficulty in

remembering numbers paired with visual stimulus. Therefore we suggest that there is a difference in PIU and ADHD group in terms of visual information processing system. Further neuroanatomical and neurofunctional researches to find out the diffrences are needed.

In our study, we investigated the possible impact of the sociodemographic variables on executive functioning scores. According to our findings, age is strongly associated with overall test scores. In line with Hong et al (2010), older ages was found to be related with better performances (41). Cognitive flexibility, target selection and information processing have been shown to start developing between the ages of 7-9 and maturation takes place during adolescence (42). When the age increases memory capacity is shifted from the visual field to the verbal phonological field (43).

Limitations: Our study population was composed of children aged 8-18 years old. ADHD group was mostly children and the OCD and HC group were adolescents. Our sample groups were drug naive groups. Therefore severity of the diseases might be milder form and it is hard to generalize the NP test scores to all types of diseases. Moreover our study groups were from clinically referred population, therefore we cannot generalize the results for the general population. Another limitation is the gender ratio, our sample is mostly composed of boys therefore we can not generalize our data to females. Also, the scales for pathologic internet use are self report questionnaires therefore there might be rater biases which is a common problem in assessment of PIU in the field.

CONCLUSION

Our study is amongst the few studies; which consists of a wide range of neuropsychological tests in the comparison of PIU, OCD, ADHD and healthy control groups. Neuropsychological profile of the PIU group is found to be similar to OCD group rather than the ADHD group. So, we suggest that, as a definitive explanation, compulsive internet use is a more valid theory than the impulsive use. To clarify the etiological background of PIU, future neuroimaging and clinical studies in larger sample sizes are needed. A better understanding of PIU will lead to more effective prevention strategies for this vulnerable population.

Conflicts of interest: The authors declare that they have no conflict of interest.

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Attributions related to spousal sexual violence among married women in Turkey

Türkiye'deki evli kadınların eşe yönelik cinsel şiddete ilişkin atıfları

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SUMMARY

Objective: Spousal sexual violence (SSV) is a form of intimate partner violence (IPV) that can affect women physically and psychologically and often co-occurs with other forms of IPV. The estimated prevalence of SSV might not reflect the reality since women often do not readily perceive it as a form of violence. **Method:** This descriptive study aimed to investigate the factors associated with married women's attributions related to SSV. The sample consisted of 510 married women who were recruited during their visits to various outpatient clinics in a hospital in Turkey between July and December 2016. The data was collected as self-reports via sociodemographic forms, Attributions related to the Sexual Violence Scale, the sources of help-seeking, and the Bem Sex-Role Inventory. **Results:** Among the sample, 12.7 % reported lifetime SSV. The age and education level of the father predicted victim-blaming attributions, and the education level of women and their fathers predicted rape-supportive attributions. Women who had an arranged marriage had higher rape-supportive attributions. These attributions were not associated with gender role orientation and experience of SSV. Consultation with healthcare professionals was the most common suggestion for women who experienced SSV. **Discussion:** Attributions of married women to SSV are related to individual and marital factors. Education could be a valuable tool with its form and content for shaping women's attributions to SSV.

Key Words: Domestic violence, attributions, sexual violence, gender roles

ÖZET

Amaç: Eşe yönelik cinsel şiddet, kadınları hem fiziksel hem de psikolojik olarak etkileyebilen ve sıklıkla diğer şiddet formlarıyla birlikte ortaya çıkan bir yakın partner şiddetidir. 'Kadinlar yakin iliskide cinsel siddeti bir siddet bicimi olarak algilamadigindan esler arasi cinsel siddetin yayginligi gercegi yansitmayabilir. **Yöntem:** Tanımlayıcı tipte olan bu araştırma, evli kadınların eş cinsel şiddetiyle ilgili atıflarına ilişkin faktörleri araştırmayı amaçlamıştır. Örneklemi Türkiye'de bir hastanede Temmuz-Aralık 2016 tarihleri arasında çeşitli polikliniklere başvuran 510 evli kadından oluşmaktadır. Veriler, sosyodemografik form, Cinsel Şiddete İlişkin Atıflar Ölçeği, Yardım arama kaynakları ve Bem Cinsiyet Rolü Envanteri aracılığıyla toplanmıştır. **Bulgular:** Örneklemin %12,7'si yaşam boyu eş cinsel şiddeti bildirmiştir. Babanın yaşı ve eğitim düzeyi mağduru suçlayan atıfları, kadınların ve babalarının eğitimi ise cinsel şiddeti destekleyici atıfları yordamaktadır. Görücü usulüyle evlenen kadınların cinsel şiddeti destekleyici özellikleri daha yüksekti. Bu atıflar, cinsiyet rolü ve eş cinsel şiddet deneyimi ile ilişkili değildi. Katılımcıların eşi tarafından cinsel şiddet deneyimleyen kadınlara destek için en yaygın önerisi sağlık profesyonellerine başvurmalarıydı. **Sonuç:** Evli kadınların eş cinsel şiddetine atıfları bireysel ve evlilik özellikleriyle ilişkilidir. Eğitim, biçimi ve içeriğiyle kadınların eş cinsel şiddetine ilişkin atıflarını şekillendirmede önemli bir araç olabilir.

Anahtar Sözcükler: Aile içi şiddet, atıflar, cinsel şiddet, cinsiyet rolleri

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INTRODUCTION

Spousal sexual violence (SSV) can considerably affect a woman physically and psychologically (1,2). Compared with sexual violence committed by other perpetrators, sexual violence within marriage involves greater physical violence (3) and recurrent assaults (4). Although sexual violence by the spouse is assumed to cause less severe trauma to the victim than the stranger perpetrator (5,6), victims of SSV are more likely to be diagnosed with depression and anxiety than victims of stranger assailants (7). Many survivors reported guilt and a diminished sense of self-worth and blame themself for the violence (8). Moreover, sexual violence by an intimate partner predicts post-traumatic stress di-sorder (PTSD) even after physical violence severity is controlled (9).

Sexual violence by the spouse is usually not perceived as a form of violence by society, has been invalidated by the legal system, and is ignored by professionals (9). Also, the definition of SSV is affected by legal and cultural factors (10). Questions such as who perpetrates the violence, who is the victim, what is violated, and who decides whether the act contains violence need to be answered to define sexual violence within marriage (11). Spousal sexual violence is considered a crime with the legal regulation made in 2005 efforts to harmonize Turkish law with European Union legislation (12). A sentence of 7 to 12 years is foreseen for SSV and accounts for a notable reason for divorce. Being assaulted by someone who is considered to be close and trusted and continuing to live with that individual leads to the persistence of humiliation, disgust, pain, and threats, often resulting in feelings of weakness and isolation in the victims (13, 14). However, the prevalence and perceptions of married women have not been addressed adequately in the literature (8, 15).

The research on the impact of SSV on its victims is limited. That is explained with victims often seeking help if they experience both physical and sexual violence (16), and the law enforcement system does not identify them as real victims (17,18). However, Stermac, Bove, and Addison found that sexual violence committed by the intimate partner compared to other perpetrators includes more physical violence and causes more injuries to the victims (3). For example, the most common complaints in the study conducted with women exposed to SSV are dyspareunia (72%), urinary tract infection (50.9%), urinary incontinence (32.4%), menstrual irregularity (25%), miscarriages (20.4%), and unwanted pregnancies (17.6%) (19). The message of protection against HIV through monogamy or condom use is reported, but married women are at risk due to their spouse's sexual behavior (20-22).

Reliable estimates of the prevalence of SSV are difficult to obtain for several reasons (17, 23-25). Some of the survivors consider sex as a wifely duty (26, 27). Women who experience sexual violence do not disclose their experiences to anyone (28, 29); such hesitations emanate from the belief that no one would believe them (18). Individuals are likely to make different attributions to scenarios of sexual violence based on the relationship between a survivor and a perpetrator (30). For instance, SSV is perceived as a less serious crime than other forms of violence (31), and blame is directed primarily at the survivor (32). However, a replication of the original study (31) in Turkey showed that seriousness of sexual violence were assessed by Turkish participants more negatively than the original study (33).

Sexual violence perpetrated by a spouse is assumed to cause less severe trauma to the survivors than the trauma perpetrated by a stranger (5,6). Studies have revealed that the psychological effects on the survivors were either independent of the identity of the perpetrator (2,34) or had more severe consequences when sexual violence occurred within a marital relationship (7,35). In this respect, Westwell stated that mental health professionals should be ready to face sorrow, fear, sexual dysfunction, loss of confidence, and lower self-esteem in SSV to a similar extent that they witness in the survivors of other sexual violence (36).

The majority of studies related to attitudes towards SSV have focused on the characteristics of the perpetrators or the survivors, but the characteristics of the observers are generally disregarded. A discrepancy in attitude towards survivors of sexual vio-

lence led researchers to identify the causative factors. Jeffords and Dull (1982) found that females, younger individuals, those who were more educated, and unmarried participants were more commonly in favor of the repeal of the marital rape exemption law (37). Illiteracy, low income, and younger age at marriage were predictors of endorsement of domestic violence (38). Jeffords revealed that supporting norms against marital rape were positively associated with Judeo-Christian religiosity (39).

Spousal sexual violence often co-occurs with other forms of IPV. Many survivors of sexual violence reported that sexual violence was only a part of the aggressive behavior inflicted on them (34). There are limited studies related to victimization status on attitudes towards sexual violence. Past victimization status was reported to not be a salient predictor of perceptions related to sexual violence (40), and experiencing sexual violence was positively associated with blaming the victim (41).

Although the traditional division of roles as a function of gender has declined over time, in a traditional marriage, the primary role of women still includes housework, childcare, and fulfilling the husband's sexual needs. Gender role orientation is an important factor in shaping one's attitudes towards sexual violence. Compared to egalitarians, individuals who believed in traditional gender roles were found to have a greater tendency to minimize the severity of sexual violence in all scenarios after reading vignettes in which sexual violence was committed by a neighbor, an ex-partner, and a current partner (5). Jensen and Gutek reported that women holding traditional sex-role beliefs were associated with blaming themselves and other victims of sexual violence (42). While gender role orientation contributes to men's attitudes towards sexual violence, women's gender role orientations and their attitudes towards sexual violence were found to be unrelated (43).

Limited studies have addressed attributions related to SSV compared to other forms of violence. The samples in the majority of available studies on sexual violence consist of university students (6, 30, 44-46), and data on married women are sparse. These facts hinder the generalizability of their findings and call for studies with samples that include married women. The current study, therefore, aimed to investigate the attributions of married women related to SSV. It was hypothesized that responses to questions, which assess attributions related to sexual violence, following a vignette describing a sexually violent act by a spouse will differ significantly based on the features of the individual examined in this study.

METHOD

Participants

The hospital at which the current research was conducted is one of two obstetrics and gynecology hospitals in Ankara, the capital and the second most populated city in Turkey. Inclusion criteria for the study included women who were 18 years and older, married at the time of the study, agreed to participate, were literate, and did not have neurological or mental illnesses that prevented them from filling the forms. The study design was descriptive, and the sample was recruited between July and December, 2016.

Materials and Procedure

The questionnaire included a form that queried sociodemographic information and history of domestic violence, a vignette that depicted SSV, the Attributions related to sexual violence Scale, and the Bem Sex-Role Inventory (BSRI).

Sociodemographic information form. The form consisted of questions regarding age, duration of education, perceived religiosity, and monthly household income of the participants. Additionally, the form included questions on the duration of education of the participants' parents and spouses, as well as the type and duration of their marriage. The type of marriage was categorized as arranged or non-arranged. In an arranged marriage, the bride and the groom are usually selected by persons other than themselves, in particular by family members. The degree of religiosity was assessed via the question 'To what degree do you consider yourself

as religious?'. The response options ranged from 1 (not religious) to 5 (very religious).

History of domestic violence form. The assessment of domestic violence was carried out according to the definitions used in the WHO Study on Prevalence of IPV (47) and Research on Domestic Violence against Women in Turkey (48). Sexual violence was depicted as having sexual intercourse when the female in the relationship was unwilling, as well as forcing her to participate in certain sexual activities without her consent. The participants were asked to report the presence and, if present, to describe the frequency of being subjected to any of these acts by their spouse as "happened only once", "happened a couple of times", "happens occasionally", "happens frequently" and "happened before but does not happen anymore." The history of SSV was grouped into two categories: 'no' (the absence of sexual violence) and 'yes' (the presence of a history of SSV). The form also included questions about physical, verbal and economic violence, but these factors were not used in the final analyses.

Vignette. Earlier studies have evaluated attributions related to SSV using short vignettes (45, 46, 49-53). The vignette used for the assessment of attributions related to SSV in the present study was adapted from Durán, Moya and Megías (54). This particular vignette was preferred because it did not contain any depiction of overt violence that might disturb the participants or depictions that might be confused with physical violence (Supplementary File 1). After reading the vignette, the participants completed seven questions on Attributions related to the Sexual Violence Scale and two questions related to help-seeking.

Attributions related to Sexual Violence Scale (ASVS). The scale was derived from previous studies that established the reliability and content validity (30, 55-57). Two questions were prepared by the researchers of the current study to query attitude towards help-seeking and help-seeking behavior that were added to the scale above. Attitude towards help-seeking was assessed with the question "To what extent do you agree with the view that Ayşe should seek help in this situation?" Participants were asked to indicate the extent to which they agreed with 1 being the minimum and 10 being the maximum. Afterwards, the participants were asked the respond an open-ended question (With whom/where can Ayşe get help in this situation, please specify) to indicate possible sources of help.

Bem Sex-Role Inventory (BSRI). Bem (58) developed the BSRI by including a neutral structure to the bipolar conception of gender roles as femininity and masculinity in order to identify individuals who fell in the middle of the dimension; this was done in response to critics (59, 60). The scale was adapted to the Turkish by Dökmen (61). The Cronbach's alpha internal consistency coefficient of the original study was .73 for the Femininity subscale and .75 for the Masculinity subscale; the Cronbach's alpha internal consistency coefficient was determined to be .86 for both subscales in the current study. The scale consists of 20 feminine and 20 masculine adjectives that represent traditional gender roles. The responses to the feminine and masculine adjectives were summed up separately, then the median of the masculine and feminine scores of all the participants were calculated. The participants were grouped into four categorical groups (masculine, feminine, androgynous, undifferentiated) based on a median split of the Masculine and Feminine scores.

Procedure

Consecutive patients admitted to outpatient clinics of an Obstetrics and Gynecology Hospital were invited to participate in the study. Thirty-one participants withdrew their consent and left the study because they reported to disturbed by the questions about religiosity or the vignette about sexuality.

Supplementary File-1
The vignette

Ali and Ayse have been married for two years. A few days ago, they had a quarrel over some minor problems. While Ali seemed to have forgotten about the quarrel, Ayse was still angry with her husband and avoided sexual intercourse since this incident. A week later, things seemed to have improved between them. They went out for a meal and enjoyed it a lot. When they came back home, Ali hinted to his wife that he wanted to have sexual intercourse, but Ayse refused it. Ali had sexual intercourse with Ayse, although she did not want it.

Five hundred and ten participants were provided written and verbal information regarding the objectives and content before initiating the study. Then the participants were asked to read and sign an informed consent form. The volunteers filled the questionnaires in an empty room under the supervision of the researcher. The protocol, method, and instruments of the research were reviewed and approved by the hospital ethics committee (2016/4).

Statistical Analysis

The sample size of the current study was calculated based on the findings of Ewoldt et al. (30); the latter study was conducted in the USA and involved similar instruments. Ewoldt et al. (30) reported that the mean and the standard deviation of the Rape-Supportive Attributions Scale, which was adopted and used in the current study, was 12.18 ± 4.89 (n = 233). The number of individuals needed to attain 80% power and a 5% type I error assumption might be a deviation of ±5% from these values and was calculated as at least 508 (R, 3.0.1. Open Source Software Program). The method used in the current study was convenience sampling. The final sample consisted of 510 married women older than 18 years.

The analyses were performed by using Jamovi (version 1.6.23). Normal distribution was assessed with analytical (Kolmogorov–Smirnov test) and visual (histograms and probability graphics) methods. Descriptive values were presented as mean and standard deviation (S.D.) for continuous variables; numbers, and percentages for categorical variables. The comparisons between groups were performed with one-way ANOVA. Lastly, multiple regression was used to analyze the relationship between attributions and characteristics of women. Statistical significance was accepted as $p < 0.05$.

RESULTS

The participants were 33.3 (±9.6) years old, and the duration of their education was 10.9 (±3.7) years. A total of 58.8% of the participants had a wage-earning occupation, and their monthly household income was 2856 (±1503.6) Turkish Liras (1$=3.03₺; at the time of the study). Amongst the sample, 15.3% had a monthly household income below the official minimum wage for Turkey in 2016 (1300 Turkish Liras). The mean (±S.D.) years of education of the mothers and fathers of the participants were 4.5 (±3.5) and 6.7 (±3.7), respectively. The mean (±S.D.) age of the women at the time of marriage was 22.9 (±5.2) years, and the duration of marriage was 10.5 (±10.1) years. One-third (34.5%) of the women had an arranged marriage, and more than half (54.5 %) had children. The findings showed that 12.7% of participants experienced sexual violence at least once in their marriage.

Validity and Reliability of Attributions Related to Sexual Violence Scale

The validity and the reliability of the Turkish form of the Scale (30, 55-57) was analyzed, since they have not been studied earlier.

Validity. The response scores obtained for the eight questions in the current sample were subjected to Exploratory Factor Analysis (EFA) using Jamovi (version 1.6.23). To determine the suitability of the collected data for factor analysis, the Kaiser–Meyer–Olkin (KMO) coefficient was determined as.785, and Bartlett's Test of Sphericity was 1481 ($p<.001$) suggesting that the current data was suitable for factor analyses. The maximum likelihood extraction method was used in combination with varimax rotation. The cut-off value for factor loadings was considered as .30 in the adaptation of the scale. Based on the factor loadings and considering the .30 criterion, it was decided to exclude one item from the scale, and the total number of items was therefore decreased to seven. Exploratory factor analysis revealed the presence of one factor with eigenvalues greater than 1 (2.83), whereas Parallel analysis revealed a three-factor solution in the current study. The scree plot revealed a clear break after the second factor. The final scale was accepted to consist of two factors which explained 54.2% of the variance .We also chose the 2-factor model because it was compatible with the original scale (30, 55-57). Factor 1 contributed 34.5%, while Factor 2 contributed 19.7% to this variance. Assessment of these two factors was consistent with

Supplementary File-2
Attributions related to Sexual Violence Scale items and their factor loadings (N = 510)

Items	Rape-support	Victim-blame
1. How interested was Ayse in having sexual relation?	.073	**.747**
2. How much control did Ayse have in this situation?	.123	**.407**
3. How much did Ayse enjoy this situation?	.251	**.720**
4. How obligated was Ayse to engage in sexual relations?*		
5. How psychologically damaged do you feel Ayse will be from this experience?	**.513**	.138
6. To what degree were Ali s actions a violation of Ayse s rights?	**.714**	.160
7. How violent do you think this situation was?	**.887**	.210
8. How certain are you that this incident would be considered as sexual violence?	**.877**	.226

Note. All the items were rated on a scale of 1 10,
* Based on factor loadings and considering the .30 criterion, this item was excluded from the scale.

a previous study (56), with Victim-blame items loading on Factor 1 and Rape-support items on Factor 2. A positive but weak correlation was identified between the two factors (r=.10). These analyses support the use of Victim-blame and Rape-support as separate factors. The seven items and their factor loadings are shown in Supplementary File 2.

Reliability. The Cronbach's alpha reliability coefficient of Victim-blame was reported to be .64 in the original (56), as well as the current study. Higher total scores correspond to higher victim-blaming. The final victim-blame factor included three items questioning the victim's desire for sexual relations, the victim's failure to control the situation, and the victim's level of enjoyment (How psychologically damaged do you feel Ayşe will be from this experience?, To what degree were Ali's actions a violation of Ayşe's rights?, How violent do you think this situation was?, How certain are you that this incident would be considered as sexual violence?). The Cronbach's alpha reliability coefficient of Rape-support was reported to be .82 in the original (56), and .85 in the current study. The final rape-support factor included four items questioning the certainty of the act as sexual violence, violation of the victim's rights, the level of violence, and the psychological damage undergone by the victim (How interested was Ayşe in having sexual relation?, how much control did Ayşe have in this situation?, how much did Ayşe enjoy this situation?). All items were reverse-scored and added, such that higher total scores corresponded to higher rape-supportive attributions.

Victim-blaming attributions and characteristics of women

Multiple regression analysis was used to test if the individual and marital characteristics could significantly predict the participants' ratings of victim-blaming attributions (Table 1). Individual characteristics, which included age, education level of the participant, her mother, her father, and level of religiosity, were included in the first step. Regression analyses indicated that two predictors explained 5% of the variance (R2 =.05, F (5,504) =5.49, p≤.001) in the first model. Age was found to significantly predict victim-blaming attributions (β = -.18, p≤.001), as did the education level of the father (β = -.12, p=.03). When marital characteristics (age of marriage, education level of the spouse and monthly household income) were added in the second step, age (β = -.19, p=<.05) and education level of the father (β = -.12, p=.03) were still significant predictors in the second model (R2 =.05, F (8,501) =3.52, p=<.05).

Table 1. *Victim-blame attributions related to spousal sexual violence*

Predictor	*B*	*SE*	*Beta*	*t*	*p*	R^2	ΔR^2	*F*	*p*
Step 1									
Age	-.005	.001	-.180	-3.976	**≤.001**				
Education of women	-.003	.012	-.013	-.261	.80				
Education level of mother	-.010	.012	-.044	-.802	.42	.052	.042	5.485	≤.001
Education level of father	-.027	.012	-.119	-2.174	**.03**				
Religiosity	.010	.013	.038	.825	.41				
Step 2									
Age	-.006	.001	-.193	-3.988	**≤.001**				
Education of women	-.011	.016	-.045	-.695	.49				
Education level of mother	-.011	.013	-.047	-.852	.40	.053	.038	3.519	.001
Education level of father	-.027	.012	-.120	-2.178	**.03**				
Religiosity	.011	.013	.038	.836	.40				
Age of marriage	-.002	.003	.040	.794	.43				
Education level of spouse	.002	.013	.006	.116	.91				
Monthly household income	.004	.010	.021	.386	.70				

Note. B, unstandardized regression coefficient; SE, standard error; R^2, model fit; ΔR^2, change in model fit, p≤ .05 are shown in boldface

Table 2. *Rape-supportive attributions related to spousal sexual violence*

Predictor	*B*	*SE*	*Beta*	*t*	*p*	R^2	ΔR^2	*F*	*p*
Step 1									
Age	-.003	.002	-.082	-1.813	.07				
Education of women	-.037	.015	-.127	-2.537	**.01**				
Education level of mother	-.003	.015	-.011	-.204	.84	.063	.054	6.773	≤.001
Education level of father	-.031	.015	-.116	-2.123	**.03**				
Religiosity	.026	.015	.079	1.747	.08				
Step 2									
Age	-.003	.002	-.075	-1.558	.12				
Education of women	-.025	.019	-.085	-1.328	.19				
Education level of mother	.001	.015	.001	.014	.99	.071	.056	4.806	≤.001
Education level of father	-.030	.015	-.112	-2.050	**.04**				
Religiosity	.027	.015	.083	1.823	.070				
Age of marriage	.003	.003	.052	1.033	.30				
Education level of spouse	-.017	.015	-.060	-1.093	.28				
Monthly household income	-.016	.012	-.071	-1.321	.19				

Note. B, unstandardized regression coefficient; SE, standard error; R^2, model fit; ΔR^2, change in model fit, $p \leq .05$ are shown in boldface

An independent samples t-test was conducted to compare victim-blaming and type of marriage. No significant difference in the victim-blaming scores for arranged marriage (M=.79, SD=.29) or non-arranged marriage (M=.82, SD=.27); t(508)=-1.34, p = .18) could be identified.

Rape-supportive attributions and characteristics of women

Individual characteristics including age, education level of the participant, mother, father, and level of religiosity were included in the first step. Results of multiple regression indicated that there was a significant effect of the education of the participant as well as the education level of father, and rape-supportive attributions (R2 = .06, F (5, 504) = 6.77, p ≤ .001) in the first model (Table 2). The individual predictors were examined further; the education level of the participant (β= -.13, p=.01) and the education level of her father (β = -.12, p = .03) were found to be significant predictors in the first model. After marital characteristics, which included age of marriage, the education level of the spouse and monthly household income, were added in the second step, only the education level of the father (β = -.11, p=.04) was a significant predictor in the second model (R2 = .07, F (8, 501) = 4.81, p ≤ .001).

An independent-samples t-test was conducted to compare rape-supportive attributions and the type of marriage (Table 3). There was a significant difference in the rape-supportive scores between arranged (M=1.11, SD=.32) and non-arranged marriage (M=1.09, SD=.33); t(508)=--2.55, p = .01).

Victim-blaming, rape supportive attributions and gender role orientation

A one-way ANOVA indicated that the effect of gender roles in victim-blaming attributions (F (3,506) = 0,90, p= .45) and rape-supportive attributions (F (3,506) = 2,67, p= .05) were not significant.

Victim-blaming, rape supportive attributions and history of SSV

An independent samples t-test was conducted to compare victim-blaming and rape-supporting attributions on the participants' history of SSV (Table 3). No significant difference could be identified in the victim-blaming scores for individuals who experienced SSV (M=.81, SD=.27) versus those who did not experience SSV (M=.80, SD=.28); t(508)=-.25, p = .80. Similarly, no significant difference was found in the rape-supporting scores for

Table 3. *Victim-blaming and rape-supportive attributions related to spousal sexual* violence

Variables	Attributions related to sexual violence									
	Victim-blaming					Rape-supportive				
	M	*SD*	*df*	*t*	*p*	*M*	*SD*	*df*	*t*	*p*
Marriage type										
Arranged	.79	.29	508	-1.34	.18	1.11	.32	508	-2.55	**.01**
Non-arranged	.82	.27				1.03	.33			
History of partner sexual violence										
Yes	.81	.27	508	-.25	.81	.31	.04	508	-2.65	.80
No	.80	..28				.33	.02			

Note. M, mean; SD, standard deviation; df, degree of freedom, p≤ .05 are shown in boldface.

participants who experienced SSV (M=1.07, SD=.31) versus those who did not (M=1.06, SD=.33; t(508)=-.28, p = .78).

Attitudes towards help-seeking

The mean (±S.D.) score of agreement with help-seeking behavior by the victim in sexual violence marriage was 6.52 (±3.31) over 10. According to our findings, 83.1% (n=424) of the participants advised an assistance for the woman in the hypothetical marital sexual violence scenario. Health care workers (psychologist, psychiatrist, general practitioner, gynecologist and social worker) constituted the primary source of support. Other sources included family members, spouses, friends, police, and a lawyer, respectively. Around 9.9% of the participants suggested that women undergoing sexual violence in marriage should not share this incidence with anyone (Table 4).

Table 4. *Help-seeking behavior in spousal sexual violence*

Sources of help	% (n)
Psychiatrist/psychologist	42.9 (178)
Family members	11.8 (49)
General practitioner/gynecologist	13.5 (56)
Spouse	11.1 (46)
Should not share with anyone	9.9 (41)
Friends	5.1 (21)
Social worker	2.9 (12)
Police	1.9 (8)
Lawyer	0.7 (3)
Total[a]	100 (414)

Note. a= Only 414 out of 510 participants answered this question; 86 participants did not reply to this question. 424 participants who answered the question specified more than one category in their answers.

DISCUSSION

The findings of the current study revealed that victim-blaming attributions showed a reduction with age, as well as education of women and their fathers. Similarly, rape-supportive attributions were decreased with the education of women and their fathers. Women who had an arranged marriage had higher rape-supportive attributions compared to women who did not have an arranged marriage. However, gender role orientation and history of SSV did not predicted with victim-blaming and rape-supportive attributions. A large proportion of study participants suggested that survivors of SSV should seek help from a healthcare professional.

There are inconsistent findings in the literature on whether the age of the participants can predict their attitude towards sexual violence (37, 62-65). Interestingly, age was found to be associated with victim-blaming attitudes but not with rape-supportive attributions in the current study. Aromaki et al. (62) and Ferro et al. (64) reported that younger participants in studies with a design similar to ours were more likely to blame the victim compared to older participants. It is often assumed that today's women are more educated and conscious about sexual violence than the previous generations. However, educational institutions represent one of the social domains where the gender gap still prevails in Turkey (66). Recent reports provide evidence on the inadequacy of programs to promote gender equality through education in Turkey despite recent reforms (67, 68).

The present study showed that the educational attainment of women predicted rape-supportive attributions; thus, as the education level of women decreased, rape-supportive attributions increased. Supporting our findings, Yüksel Kaptanoğlu et al. (48), reported that as the level of education of married women in Turkey increased, they showed greater consent to the statement that “if a woman does not want to have sex, she can refuse the request of her husband”. Additionally, the educational attainment of their father, but not their mother, predicted victim-blaming and rape-supportive attributions by the participants in the current study. Considering 65.6% of Turkish mothers have never discussed sex with their daughters (69), we can state that there is an obvious need for institutional sources of knowledge on this subject. In fact, in a study consisting of a sample of adolescent girls in Turkey, 88.8% of the participants asserted that they thought sex education should be provided at school (70). Education may influence women's attributions directly or via its influence on individuals with close social ties. Gender-egalitarian attitudes are widely accepted to be associated with higher education in both genders (71). Based on the current findings, improving women's educational attainment appears to be a plausible strategy in changing their attributions towards SSV.

Patriarchy in a family is a predictor of increased justification for IPV (72). The recognition that violence is intolerable is likely to pass down through generations. The current study illustrated that the women who had an arranged marriage had higher rape-supportive attributions than those who did not. Marrying someone a woman desires demonstrates her freedom to choose a spouse. Another explanation might be the bride and groom know little about each other before marriage in an arranged marriage. Puri, Shah and Tamang stated that having limited freedom to choose a spouse causes a lack of communication about the relationship and mutual rights and jeopardizes their ability to negotiate about sex (73). Therefore, our finding may be interpreted as a reflection of the sociocultural background of the woman in her tendency to perceive forced marital intercourse as a justifiable act. In addition to the level of education of the parents, the current findings also emphasize the influence of sociocultural background on the women's attribution related to SSV.

Findings of the current study showed that 10% of women were in favor of not sharing SSV with anyone, and only 2% of them proposed to report SSV to the police. Especially for this criminal act, the low awareness and the stigmatizing role of culture may be barriers to seeking help for SSV. Victims may fearfully expect blaming attitudes from family members and society and feel shame and guilt. Also, they may choose not to report because of the anticipation of uncertainty, insecurity related to legal processes, and the expectation of impunity. A study with Turkish lieutenant candidates found that only 30% of respondents believed that the police had a real role to play in combating domestic violence (74). Another study conducted in Turkey showed that police officers are more tolerant of physical and verbal abuse within the marriage, but less tolerant of the idea of the victim leaving an abusive spouse than members of the judiciary (75). Nonetheless, a large proportion of participants in the current study suggested that women who have undergone SSV should seek help from a healthcare professional. According to a three-year retrospective analysis of admissions for sexual assault in an emergency service, 15% of the perpetrators were reported to be spouse (76). The majority of Turkish healthcare workers (87.3%) believe that forced sexual intercourse between couples is a form of violence (77).

Beliefs regarding the specific roles of women and men may predict support for the use of violence against women (71). However, this relationship was found to be less significant in women (78). Gender roles were not associated with victim-blaming and rape-supportive attributions in the current study. The masculinity and femininity scores obtained in the present study conformed with the gender roles and inequality endorsed by patriarchal ideology in society.

The current study showed that being subjected to sexual violence was not related to the rape-supportive attributions towards SSV. However, Kiyak and Akin (79) found that the women who reported lifetime violence tended to adopt a more accepting attitude towards violence than those who did not. Jaffe et al. (80) stated that the survivors of partner sexual violence were less likely to label their experiences as rape.

Limitations

The current study has some limitations that need to be considered while evaluating the data. The sample of this study consisted solely of a group of women seeking help for their gynecological problems. Thus, the findings may not be generalized to all married women. A larger sample that represents all women in the society will be essential for further studies. Duplicating the research with different populations and at different periods could increase the external validity of the study. The sample size of the current study is sufficient to analyze the relationship between diverse variables and attributions related to SSV towards women. Such studies are rarely found in the published literature. The use of self-report scales is another limitation of the study. Using instruments that can assess social desirability bias in further studies will be beneficial.

CONCLUSIONS

Studies related to the attributions of observers towards SSV have often focused on the degree of

acquaintance between the perpetrator and the survivor. However, the characteristics of observers who assess the incidence are often missing. Several studies have revealed that the tendency to blame the survivor and support sexual violence was more likely when the relationship between the survivor and the perpetrator was more intimate. The current study focuses on the context of sexual violence in a marital relationship and does so in a sample of married women, who may be potentially subjected to this form of violence. The overall findings demonstrate that married women's attributions related to SSV were associated with their age, education, and their family structure. In this sense, education could be a significant tool with its form and content for shaping women's attributions to SSV.

Clinicians and researchers sometimes use terms such as 'unwanted sex in marriage' and 'forced sex' instead of SSV. Changing the language used, acknowledging that violence is violence even when the perpetrator is the spouse, not only creates the opportunity to discuss the experiences of the survivors and the way of help-seeking but also gives the message that what survivors experience is an undisputed form of violence. Women examined in the emergency services with physical violence must also be assessed for other forms of violence, including SSV. Violations against the physical integrity of the applicants for sexual trauma should be considered independent of the relationship between the victim and the perpetrator. Clinicians and psychotherapists should question the history of sexual violence in patients presenting with sexual dysfunctions.

The present study provides information on women's perception and help-seeking toward SSV that remark the development of policies and programs to prevent this violence. The victims may hesitate to seek help for various reasons. Clinicians, especially mental health professionals, should support the individual in overcoming feelings of guilt and shame and provide means to reach for help and social support. Also, clinicians should identify additional problems such as unwanted pregnancy, deal with the feelings, and explore effective alternatives. Finally, it should not be neglected to develop a safety plan that is unique to the individual, following the victim's preferences, to avoid the perpetuation of the violence. Considering the contribution of education in the attributions related to SSV, and the prevalent deficits in access to formal sex education, clinicians should seize any opportunity to discuss the sexual myths, and emphasize that forcing sex is a form of violence even in the context of intimate relationships.

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A comparative study of separation anxiety and sleep problems in school-aged children of health professionals during the COVID-19 pandemic

COVID-19 pandemisi sırasında sağlık çalışanlarının okul çağındaki çocuklarında ayrılık kaygısı ve uyku sorunlarının karşılaştırmalı araştırılması

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SUMMARY

Objective: The COVID-19 pandemic continues to affect physical health as well as mental health in children and adolescents. In this study, we aimed to investigate the state, trait, separation anxiety, and sleep disturbances in the children of health professionals in the first and third waves of the pandemic. **Method:** 33 children of health professionals and 42 children whose parents were not health professionals were included in the study. Sociodemographic data form, The State-Trait Anxiety Inventory (STAI), Separation Anxiety Assessment Scale-Child Version (SAAS-C), The Sleep Disturbance Scale for Children (SDSC) were used for assessment each for the first and third waves of the pandemic. **Results:** The state, trait anxiety, and SAAS-C scores of the children of health professionals were higher than the control group in the first wave of the pandemic, state anxiety and SAAS-C scores were still higher than controls in the third wave. Positive correlations were found between the STAI and SAAS-C scores with the working hours of mothers in the pandemic. State anxiety, and SAAS-C scores were higher in children of healthcare workers with a history of COVID-19. **Discussion:** STAI and SAAS-C scores were found to be higher in the children of health professionals compared to the control group in the first and third wave of the pandemic. There was no effect being children of healthcare workers on SDSC scores. Anxiety levels were related to the time the mother worked during the pandemic and the parent's history of COVID-19.

Key Words: COVID-19, health professionals, children, separation anxiety, sleep

ÖZET

Amaç: COVID-19 pandemisi, çocuk ve ergenlerde fiziksel sağlığın yanı sıra ruh sağlığını da etkilemeye devam etmektedir. Bu çalışmada, pandeminin birinci ve üçüncü dalgalarında sağlık çalışanlarının çocuklarında durumluk, sürekli kaygı, ayrılık kaygısı ve uyku bozukluklarının araştırılması amaçlandı. **Yöntem:** Çalışmaya 33 sağlık çalışanı çocuğu ve ebeveyni sağlık çalışanı olmayan 42 çocuk dahil edildi. Pandeminin birinci ve üçüncü dalgalarının her biri için sosyodemografik veri formu, Durumluk-Sürekli Kaygı Envanteri (DSKÖ), Ayrılma Kaygısı Değerlendirme Ölçeği-Çocuk Versiyonu (AKDÖ-Ç), Çocuklar İçin Uyku Bozukluğu Ölçeği (ÇUBÖ) kullanıldı. **Bulgular:** Sağlık çalışanlarının çocuklarının durumluk, sürekli kaygı ve AKDÖ-Ç puanları pandeminin birinci dalgasında kontrol grubuna göre daha yüksek bulundu, üçüncü dalgada durumluk kaygı ve AKDÖ-Ç puanları kontrol grubuna göre daha yüksekti. Pandemi döneminde annelerin çalışma saatleri ile DSKÖ ve AKDÖ-Ç puanları arasında pozitif korelasyon saptandı. COVID-19 öyküsü olan sağlık çalışanlarının çocuklarında durumluk kaygı ve AKDÖ-Ç puanları daha yüksekti. **Sonuç:** Pandeminin birinci ve üçüncü dalgasında sağlık çalışanlarının çocuklarında kontrol grubuna göre DSKÖ ve AKDÖ-Ç puanları daha yüksek bulundu. Sağlık çalışanı çocuğu olmanın ÇUBÖ puanlarına etkisi saptanmadı. Anksiyete seviyeleri, annenin pandemi sırasında çalıştığı süre ve ebeveynin COVID-19 öyküsü ile ilişkili bulundu.

Anahtar Sözcükler: COVID-19, sağlık çalışanları, çocuklar, ayrılık kaygısı, uyku

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INTRODUCTION

The Coronavirus disease (COVID-19) first appeared in China, it spread all over the world in a short time and caused the first pandemic of the 21st century. To combat this disease, which is mainly transmitted by droplets and contact, the use of masks became widespread, schools were closed, work from home was increased and quarantine was applied in many countries. With the use of vaccines developed with different methods, the transmission of the disease, intensive care hospitalization, and mortality are decreasing, but the pandemic has still not been fully controlled. As of 20 December 2022, globally close to 650 million confirmed cases and over 6.6 million deaths have been reported, and over 13 billion doses of vaccine have been administered (1).

Because of the restrictions imposed, there has been an increase in psychiatric symptoms in children and adolescents affected by the pandemic. In a study involving children aged 9-12 in the COVID-19 pandemic, it was discovered that the level of trait anxiety increased with age (2). Children in the same age group reported moderate trait anxiety, low state anxiety, and trait anxiety was found to be higher in girls (3). A large population study found a significant delay in bedtime and waking time in children during the COVID-19 outbreak in Italy. At the same time difficulty falling asleep, night wakings, anxiety at bedtime, sleep terrors, and nightmares were reported during the pandemic (4). The group with the most difficult working conditions during the pandemic has been healthcare workers. Long-term work in emergency, clinical and intensive care units providing COVID-19 services not only increases the risk of COVID-19 transmission but also paves the way for the emergence of mental pathologies in healthcare workers. In a study, it was shown that 50.8% of healthcare workers had severe state anxiety and 71.9% had moderate trait anxiety during the pandemic. The anxiety levels of the participants who were married and had children were found to be higher (5). It was reported that 39.8% of healthcare professionals working at the beginning of the pandemic had poor sleep quality, and also increased depression and anxiety scores were seen in this group (6).

On the other hand, it is possible for the children of healthcare workers to experience separation anxiety due to separation from their parents, to have increased anxiety due to fear of contacting COVID-19. Also, sleep disorders maybe appear as a result of increased time spent at home and screen exposure (7,8).

When the relevant literature was examined, it was found that psychiatric symptoms and findings were investigated in children and healthcare workers, but there were limited studies investigating the mental status of children of healthcare workers during the pandemic period. With the recent study, we aimed to comparatively examine separation anxiety and sleep problems, as well as state and trait anxiety in the first and third waves of the pandemic period in healthcare workers' children.

METHOD

Participants and design of the study

In this study, thirty-three healthcare workers' children without mental retardation, neurological and metabolic disease, and forty-two healthy children whose parents were not healthcare workers were included. The children participating in the study were between the ages of 6 and 12 years. In addition to face-to-face interviews, an online survey system was also used to collect data. The anxiety and sleep scales were completed twice time by the children and their parents, once in the first wave (April-May 2020), the period when the pandemic first started, and in the third wave (March- April 2021), when the cases increased again. Research approval was obtained from the Erciyes University ethics committee (2020/258). Written informed consent was obtained from the children and their parents after detailed explanations were given about the study. The procedures followed the ethical standards of the responsible committee on human experimentation (institutional or regional) or with the Helsinki Declaration of 1975 (as revised in 1983).

Measures

Sociodemographic data form: The researchers created a sociodemographic form and scale to collect information about the demographic characteristics of patients. The age, gender, education degree, parent's work frequency in the pandemic, the thoughts of children about being at home, the COVID-19 history of parents, and causes of sleep disturbance were obtained.

The State-Trait Anxiety Inventory (STAI): It was developed by Spielberger et al.(9) in 1970, and adapted to Turkish by Öner and Le Compte (10). It is a 20 question Likert-type scale that assesses both state and trait anxiety levels. The theoretical range is from 20 to 80. A high level of anxiety level is revealed by a high score, while a low level of anxiety is suggested by a low score.

Separation Anxiety Assessment Scale-Child Version (SAAS-C): It's a 34-item, 4 points Likert-type scale designed to assess separation anxiety and anxiety-related symptoms in children aged 6 to 10 (11). Teze et al. (12) did a validity and reliability study in Turkey in 2016, and this scale has 14 items, with the lowest score being 14 and the maximum being 56.

The Sleep Disturbance Scale for Children (SDSC): It is a Likert-type scale filled by parents, consisting of 26 items and 6 sub-dimensions. It was developed by Bruni et al. (13). It is possible to get a minimum of 26 points and a maximum of 130 points. Study of Turkish validity and reliability performed by Agadayi et al (14).

Statistical analysis

The Statistical Package for Social Sciences software program (SPSS, version 21.0 for 96 Windows) was used for statistical analysis. Continuous variables were represented by the mean and standard deviation, whereas categorical variables were represented by percentages. The normality of the distribution of continuous variables was tested using the Shapiro-Wilk and Kolmogorov-Smirnov tests. The Chi-square test was used to compare categorical variables. To compare variables between groups, repeated ANOVA test and two-way ANOVA test were utilized. Bonferroni correction was also used. Pearson's correlation analysis was used to determine the relationship between two variables. Significance was determined as a probability value of $p < 0.05$.

Table 1. Comparison of the two groups in terms of sociodemographic outcomes in the first wave of pandemic

	Healthcare workers' children n=33		Control group n=42	
Age (mean±sd)	9.0±1.837		9.16±2.023	
Gender (n/%)				
Female	15	45.5%	13	31%
Male	18	54.5%	29	69%
Education degree (n/%)				
Primary school	24	72.7%	29	64.3%
Secondary school	9	27.3%	13	35.7%
Parental status (n/%)				
Mother healthcare worker	10	30.3%		-
Father healthcare worker	13	39.4%		-
Both parents healthcare workers	10	30.3%		-
Parent's work frequency in the pandemic (n/%)				
Every day	29	87.9%		-
Several days a week	2	6.1%		-
Few days in 2 weeks	1	3%		-
Several days in a month	1	3%		-
COVID-19 history of parents (n/%)				
Positive	10	30.3%	10	23.8%
Negative	23	69.7%	32	76.2%
Being at home (n/%)				
Boring	20	60.6%	29	69%
Enjoyable	3	9.1%	5	11.9%
Scary	6	18.2%		-
Pleasant	4	12.2%	7	16.7%
Other		-	1	2.4%
Sleep disturbances (n/%)				
Increase in screen exposure	6	18.2%	10	23.8%
Deterioration in sleep hygiene	7	21.2%	22	53.4%
Anxiety	20	60.6%	10	23.8%
Other		-		-

n: number, sd:standard deviation

RESULTS

The study sample consisted of 33 healthcare workers' children and 42 children whose parents were not healthcare professionals. The sociodemographic characteristics of the healthcare workers' children and the control group in the first wave were shown in Table 1. There was no significant difference between the ages of the participants ($p=0.319$). It was found that the vast majority of healthcare workers work every day, and children find staying at home to be boring. Sleep disturbance was also questioned in the sociodemographic data form. It was detected in all children participating in the study, and while anxiety was at the forefront in the children of healthcare workers, the deterioration of sleep hygiene was at the forefront during the time spent at home due to restrictions in the control group. In the third wave, 60% of health professionals worked every day, a higher number of working days (mothers or fathers) were included in both waves in the group whose parents were both healthcare workers. Also, there were no children who lost their parents or any relatives due to COVID-19.

STAI state anxiety, trait anxiety, and SAAS-C

Table 2. Comparison of STAI, SAAS-C, SDSC scores in healthcare workers' children and control group during the first wave of pandemic

	Healthcare workers' children [mean(sd)]		Control group [mean(sd)]		Comparison *(Greenhouse-Geisser Sig.)*
	First-wave [a]	Third-wave [b]	First-wave [c]	Third-wave[d]	
STAI /State anxiety	46.60(5.30) a>b, a>c	42.69(5.32) b>d	41.66(5.54)	39.35(6.33)	p= 0.043,*np2*= 0.055
STAI/ Trait anxiety	50.45(7.81) a>b, a>c	41.93(7.91)	45.19(6.45) c>d	38.66(6.41)	p<0.001,*np2*= 0.189
SAAS-C	31.51(9.13) a>b, a>c	29.51(8.36) b>d	27.92(9.29) c>d	27.00(9.30)	p=0.041, *np2*= 0.083
SDSC	38.54(10.80)	38.06(10.9)	43.28(14.24) c>a, c>b	43.69(14.26) d>b	p<0.001, *np2*= 0.163

Repeated measures of ANOVA, Bonferroni correction was used for post hoc analyses,
SAAS-C: Separation Anxiety Assessment Scale-Child Version, SDSC: The Sleep Disturbance Scale for Children STAI: The State-Trait Anxiety Inventory

scores were found to be higher in children of healthcare workers than the control group during the first wave of the pandemic. STAI state anxiety and SAAS-C scores were still higher than controls in the third wave of the pandemic and it was observed that being children of healthcare workers was effective on results (Table 2). There was no effect being children of healthcare workers on SDSC scores and also SDSC scores were found to be higher in controls (Table 2). Although SDSC scores were higher in controls, there was no correlation between anxiety scores and SDSC scores. On the other hand, in the first wave of the pandemic, it was found that state anxiety score was correlated with SDSC score in children of healthcare workers (r=0.495 p=0.022).

When the healthcare workers were compared among themselves, SDSC scores were found to be higher in whose parents were both health professionals (p=0.023), while SAAS-C scores were found to be lower in the group with only father healthcare workers (p=0.041). This difference was not observed in the third wave.

A positive correlation was found between the first wave STAI total and state anxiety scores and the time the mother was worked in the COVID-19 pandemic, similarly between the SAAS-C scores and the time the mother was worked in the COVID-19 pandemic (respectively r=0.323, p=0.004, r=0.334 p=0.003, r=0.295 p=0.010) in first-wave of the pandemic. No correlation was found between the anxiety and the time father worked in the pandemic.

When the effect of both the parent's COVID-19 history and being children of healthcare workers was examined; STAI state anxiety, trait anxiety, and SAAS-C scores were higher in children of healthcare workers. Also, state anxiety and SAAS-C scores were higher in children of healthcare workers with a history of COVID-19 (Table 3).

DISCUSSION

COVID-19 pandemic has caused symptoms of stress, anxiety, depression, and insomnia among healthcare workers, especially in women and older professionals (15). Undoubtedly, mental pathology has increased in healthcare workers as well as in children. Because healthcare workers' children are

Table 3. Assessment of the parents' COVID-19 history and STAI, SAAS-C, and SDSC scores in healthcare workers' children and control group in the first wave of pandemic

		df	F	*np2*	p values
STAI /State anxiety	*Healthcare workers*	1	2.718	0.042	0.043
	COVID-19 history	1	.725	0.010	>0.05
	*1*2*	1	1.75	0.032	0.048
STAI/Trait anxiety	*Healthcare workers*	1	5.007	0.066	0.028
	COVID-19 history	1	.758	0.011	0.387
	*1*2*	1	1.082	0.015	0.302
SAAS-C	*Healthcare workers*	1	4.429	0.059	0.039
	COVID-19 history	1	1.102	0.015	0.297
	*1*2*	1	3.324	0.045	0.049
SDSC	*Healthcare workers*	1	2.886	0.039	0.094
	COVID-19 history	1	0.068	0.001	0.795
	*1*2*	1	0.618	0.009	0.434

Two way ANOVA
*1*2 means when the effects of both factors are evaluated together*
SAAS-C: Separation Anxiety Assessment Scale-Child Version,
SDSC: The Sleep Disturbance Scale for Children STAI: The State-Trait Anxiety Inventory

aware of at least some of the challenges their parents face in the pandemic, such as the risk of infection and death, they are more susceptible to stress and trauma, also face worse outcomes in case of loss of a parent (16).

In our study, STAI state, trait, and SAAS-C scores were found to be significantly higher in the children of healthcare workers in the first wave of the pandemic compared to the control group. This was an expected result and maybe because of separation from parents, the thought of losing them, conversations at home about the pandemic, and the challenges it brings. STAI state anxiety, and SAAS-C scores were still higher than controls in the third wave of the pandemic and, these results showed that being children of healthcare workers was associated with increased anxiety levels.

In the study comparing the pre-pandemic and 3 different periods of the pandemic, anxiety levels were found to be higher in all three waves compared to the pre-pandemic period in the children and adolescents (17). The prevalence of anxiety during the pandemic was 19.4% in children. Social distancing without parents was to be associated with higher Children's Anxiety Questionnaire scores (18). During home quarantine state and trait anxiety scores were found 43.17±5.86 and 51.53±5.19 in adolescents (19). In our study, similarly, in the first wave of the pandemic the scores were 46.60±5.30 and 50.45±7.81, in the third wave of the pandemic 42.69±5.32 and 41.93±7.91 respectively. In a study in which 121 healthcare workers and their children aged 8-17 participated, the level of anxiety in children was determined by Screen for Child Anxiety Related Emotional Disorders (SCARED) and parental anxiety level was measured with Beck Anxiety Inventory. While 17% of the parents had moderate anxiety and 27% had severe anxiety, approximately 33% of the children were found to have anxiety above the cut-off value in the SCARED parent and child form. According to both parents and personal reports, half of the children were above the cut-off score for separation anxiety disorder (20). The findings of the current study are in line with the data of previous studies.

The fact that STAI total and state anxiety scores, as well as separation anxiety, were positively correlated with the number of days the mother worked during the pandemic suggests that separation from parents in such a chaotic period contributes to the development of anxiety in children. In Turkey, especially during the first outbreak of the epidemic, healthcare workers started to stay in hospitals, dormitories, and hotels to not infect their relatives. In this period, children of almost all ages were separated from their mothers, and the caregiver was mostly either the other parent or the grandparents. Both separation from the parents and the increase of time spent at home due to the closure of schools may have caused an increase in separation anxiety. The research in children with type 1 diabetes mellitus has shown that perceived fear of contacting COVID-19 infection is one of the predictive factors of separation anxiety (21). Also SAAS-C scores were lower in the group where only the father was a healthcare worker in our study, and this outcome is important in terms of showing the role of the mother in attachment.

Parental history of COVID-19 also appears to be another risk factor for the development of anxiety. In children of healthcare workers with a history of COVID-19, state anxiety and SAAS-C scores were higher. STAI state anxiety, trait anxiety, and SAAS-C scores were higher in children of healthcare workers, when the effect of both the parent's COVID-19 history and being children of healthcare workers was examined together. The possibility of hospitalization during the COVID-19 disease, the fact that the parents' quarantine period, and children's separation from the caregiver during this time, being away from their support and attention may increase separation anxiety. In a study conducted in London, the SARS-CoV-2 seropositivity rate was found to be 12% in the children of healthcare workers (22). In the study, in which 126 healthcare workers and their families participated, 21 families tested positive for COVID-19 at least one parent. While 20 of 21 children were seropositive in 9 of these 21 families, none of the 23 children in the other 12 families were seropositive. This study is important in terms of showing familial clustering. The increased risk in children of healthcare workers may be multiplied by familial clustering (23). Having a COVID-19 positive person in the family may increase anxiety by causing the per-

son to be positive afterward, as well as the concern for the health of the sick person and the fear of contagion.

Sleep disturbance was found in all children participating in the study, and it was found to be associated with increased anxiety in children of healthcare workers and deterioration of sleep hygiene in the other group. The deterioration of sleep hygiene was associated with the increase in the time spent at home as a result of the closure of schools. SDSC scores were higher in the control group, and this showed that being a healthcare worker's child had no effect on SDSC scores. There was a correlation between SDSC scores and state anxiety in children of healthcare workers during the first wave pandemic period, and this was not found in the control group. This result indicates that sleep problems may be related to anxiety levels in children of healthcare workers. The higher SDSC scores in those whose both parents were healthcare workers may also be associated with increased separation anxiety. Studies conducted during the pandemic have found similar results in terms of sleep disorders in children. Sleep disturbance in children is a common problem and the pooled prevalence of any sleep disturbance in children was 54% during the pandemic (24). It has been determined that the sleep quality of children aged 6-10 years has deteriorated during the pandemic period, and they have begun to comply with their daily routines less. Increased emotional, behavioral, and hyperactive symptoms were associated with changes in sleep quality (25).

Insufficient number of children in both healthcare workers and control group, and the low number of psychiatric symptoms investigated are among the limitations of the study. The sample has not been evaluated with structured interviews for psychiatric diagnosis. Insufficient data regarding premorbid features, developmental characteristics, and temperament traits of the study and control groups. Also parents' mental status and parenting styles have not been evaluated.

CONCLUSION

It was found that the anxiety levels of the children of health professionals were higher in the first and third waves of pandemic compared to the control group. It was correlated with the working time of the mother in the pandemic, and the history of COVID-19 in the parents. Therefore, it is important to implement preventive mental health services in these groups. To support this vulnerable population physically and mentally, studies with larger samples are needed.

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Conflicts of interest: The authors declare that they have no conflict of interest.

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How do traumatic experiences affect relapse in alcohol and substance use disorders?

Alkol ve madde kullanım bozukluklarında travmatik yaşantılar nüksleri nasıl etkiliyor?

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SUMMARY

Objective: Relapses are very common in Alcohol and Substance Use Disorders (ASUD). Although traumatic experiences are more common in patients with ASUD than in the normal population, its relationship with relapses has not been adequately studied. **Method:** Fifty-one patients who were hospitalized diagnosed with ASUD according to DSM 5 were included in the study. Sociodemographic Data Form, Impact of Events Scale-R (IES-R), Hamilton Depression Rating Scale (HAM-D), Hamilton Anxiety Rating Scale (HAM-A), Dissociative Experiences Scale (DES), Addiction Profile Index (API), The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) and Traumatic Experiences Checklist (TEC) were applied during their hospitalization. Patients were evaluated for relapse in the 6th month after discharge. **Results:** Relapse was observed in 60.8% of the participants. A statistically significant difference was found between the groups with and without relapse in terms of previous psychiatric treatment, number of traumatic events and severity, neglect, emotional and physical abuse, HAM-A and DES scores ($p<0.05$). In the logistic regression analysis, it was found that not having previously applied for psychiatric treatment significantly predicted early relapses. **Discussion:** According to the study results, the previous psychiatric treatment seems to be associated with lower relapse rates. In contrast, traumatic experiences, anxiety, and dissociative symptoms seem to be associated with higher relapse rates.

Key Words: Substance Use Disorder, Traumatic Experience, Post Traumatic Stress Disorder, Relapse, Prognosis

ÖZET

Amaç: Alkol ve Madde Kullanım Bozukluklarında (AMKB) nüksler çok yaygındır. AMKB hastalarında travmatik deneyimler normal popülasyona göre daha yaygın olmasına rağmen, relapslarla ilişkisi yeterince çalışılmamıştır. **Yöntem:** Çalışmaya DSM 5'e göre AMKB tanısı ile yatırılan 51 hasta dahil edildi. Sosyodemografik Veri Formu, Olayların Etkisi Ölçeği-R (OEÖ-R), Hamilton Depresyon Derecelendirme Ölçeği (HAM-D), Hamilton Anksiyete Derecelendirme Ölçeği (HAM-A), Disosiyatif Yaşantılar Ölçeği (DES), Bağımlılık Profil İndeksi (BAPI), Hastaneye yatışları sırasında Değişime Hazırlık Aşamaları ve Tedaviye İsteklilik Ölçeği (SOCRATES) ve Travmatik Deneyimler Kontrol Listesi (TDKL) uygulandı. Hastalar taburculuk sonrası 6. ayda nüksler açısından değerlendirildi. **Bulgular:** Katılımcıların %60, 8'inde nüks görüldü. Nüks olan ve olmayan gruplar arasında önceki psikiyatrik tedavi, travmatik olay sayısı ve şiddeti, ihmal, duygusal ve fiziksel istismar, HAM-A ve DES puanları açısından istatistiksel olarak anlamlı fark bulundu. ($p<0.05$). Lojistik regresyon analizinde daha önce psikiyatrik tedaviye başvurmamış olmanın erken dönem yinelemeleri anlamlı olarak yordadığı bulundu. **Sonuç:** Çalışma sonuçlara göre daha önce psikiyatrik tedaviye başvurmuş olmak daha düşük nüks oranları ile ilişkili görünmektedir. Buna karşılık travmatik deneyimler, anksiyete ve dissosiyatif semptomlar yüksek nüks oranları ile ilişkili gibi görünmektedir.

Anahtar Sözcükler: Madde Kullanım Bozukluğu, Travmatik deneyim, Travmatik sonrası stres bozukluğu, nüks, prognoz

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INTRODUCTION

It has been found in many studies that comorbidity of traumatic experiences in patients with alcohol and substance use dısorders (ASUD) is more common than the general population. It is estimated in the literature that approximately 90-100% of patients with ASUD experience at least one trauma during their lifetime (1).

ASUD is an increasingly common public health problem all over the world. The fact that ASUD causes physical, economic, psychological, social and legal problems negatively effects the whole society, therefore it is seen that the policies regarding follow-up and treatment programs are important for the whole world (2). Traumatic experiences in ASUD is shown to be a factor that maintains addiction and affects relapse (3). There is a double-faced relationship between traumatic experience and substance use, while substance use increases the traumatic experience, while traumatic experience increases the severity of substance use (4). The frequent occurrence of traumatic experiences in ASUD patients is important because it affects the treatment prognosis of the patients (3,5).

Studies on this subject mostly focused on the diagnosis of PTSD rather than the history of trauma (6), some of them investigated only female patients (7), only alcohol or substance users (3,5,8). Greenfield et al. investigated sociodemographic factors and additional psychiatric diagnoses in alcohol addicts, and it was found that relapse rates were higher in those with a history of sexual abuse (3). In a 3-month follow-up study in which Hyman investigated the effects of traumatic events on early relapse in cocaine addicts, the relationship between sociodemographic factors, accompanying psychiatric diagnoses and trauma severity was investigated, and it was reported that trauma severity was a predictor of relapse in women, but not in men (5). In a recent 3-month follow-up study by Umut et al. investigated the relationship between sociodemographic factors and types of traumatic experiences with early relapse in patients with ASUD, emotional neglect predicted relapse (8). Finally, in the study by Haver et al. investigating the relationship between family violence and alcohol relapse in women, sociodemographic factors, accompanying psychiatric diagnoses, personality disorders and physical abuse were investigated, and it was reported that the experience of family violence in childhood and adulthood increased the relapse rates .

According to our knowledge, although factors such as sociodemographic factors, symptoms of depression and anxiety, other accompanying psychiatric conditions, substance use severity, motivation affecting relapse in patients with ASUD have been investigated with various combinations in the literature, there are few prospective studies investigating the relationship between trauma experience and relapse (3, 5, 8). The relation of data such as previous treatment admission, dissociative experiences, change in substance use behavior after trauma and its timing with relapses has not been reported before in the literature. Therefore, studies investigating the relationship between trauma experience and relapse in ASUD from a more comprehensive perspective are needed.

This study investigates the relationship between traumatic life events and substance use behavior, sociodemographic factors, and psychiatric symptoms (such as anxiety, depression, and dissociative symptoms) in patients with ASUD. Our study hypothesizes that traumatic life events and related factors in individuals with ASUD differ between relapse and remission groups.

METHOD

This study was approved by Sakarya University Non-Invasive Clinical Research Ethics Committee on 30.01.2019 with protocol number 71522473/050.01.04/18.

Sampling

The study was conducted with patients hospitalized for treatment in the inpatient service of Sakarya University Training and Research Hospital Alcohol and Substance Research, Treatment and Training Center between December 2018 and July 2019. Fifty-one people aged 18-65 who were literate, without intellectual disabilities, active psychotic or

affective symptoms, no severe neurological/metabolic or endocrinological disease, no alcohol or substance use in the last week, and no electro-convulsive therapy in the last six months and diagnosed with ASUD according to DSM-5 criteria were included in the study. All volunteers participating in the study signed the informed consent form.

Fifteen of the participants were excluded from the study because of their active psychotic symptoms, thirteen were discharged before completing the detoxification period, nine did not agree to participate in the study, four had intellectual disabilities that affected the reliability of the study, and one was over 65 years old. Each patient continued to get medical treatment, group and individual psychotherapy as standard treatment in the clinic.

Procedure

Sociodemographic data form and psychiatric scales were applied to the participants on the 7th day of their hospitalization due to avoid acute affects of withdrawal of substance. Also past archive data of the patients were also used retrospectively. The patients were re-evaluated in terms of slip, lapse and relapse by telephone, hospital records and the history taken from the patients and their relatives during the controls or by analysis of substance in urine in the 6th month after discharge. All patients were reached by phone.

Traumatic events; in this study, the definition of trauma does not require events that can affect almost everyone,as in DSM 5, and concepts such as emotional neglect and emotional abuse are included in the definition of trauma.

Remission, Slip, Relapse: A person in remission who used substances once or not exceeding 24 hours was defined as slip, substance use longer than a slip, but short enough to not create addiction or withdrawal was defined as laps, intense and continuous recurrence of substance abuse has been defined as relapse. In addition, 3-12 months of not using substances was defined as early, and more than 12 months of substance use was defined as sustained remission (9). In our study, at the statistical analysis stage, the slip group was included in the remission group and the lapse group in the relapse group.

Materials

Sociodemographic Data Form: This form was prepared by us, by examining the study examples in the literature, to include basic sociodemographic information and clinical characteristics of the patients. In the form, age, gender, marital status, educational status, place of residence, people living together, employment status, socioeconomic status, smoking, presence of comorbid medical illness, history of suicide attempt, age at onset of substance use and total duration of use, substance use behavior after exposure to trauma, and its onset timing.

Impact Of Events Scale-R (IES-R): The original form was developed by Horowitz et al. (10), the IES-R form was developed by Marmar et al. (11). The IES-R is a 22-question self-report scale that consists of a combination of three main symptoms of PTSD, re-experiencing, avoidance, and hyperarousal, in which the symptom severity experienced in the last week is scored between 0-4. The validity and reliability study of its revised form in our country was performed by Çorapçıoğlu et al. (12).

Hamilton Depression Rating Scale (HAM-D): It is a scale filled in by the interviewer and used to determine the severity of depression and the symptom pattern (13). Validity and reliability study of the 17-question form in our country was conducted by Akdemir et al (14).

Hamilton Anxiety Rating Scale (HAM-A): It is a scale used to evaluate the anxiety level in the last 72 hours and filled in by the interviewer. Out of 14 items scored between 0-4 points, 5 items constitute psychic and 9 items constitute physical subscales (15). Validity and reliability study in our country was conducted by Yazıcı et al. (16).

Dissociative experiences Scale (DES): It was developed by Bernstein and Putnam and revised by Carlson (17, 18). It is a self-assessment scale in which each question is scored between 0-100 according to frequency, and then this total score is

divided by 28 and the average score is found. In our country, the validity and reliability of the scale was made by Yargıç et al. (19).

Addiction Profile Index (API): It is a scale consisting of 37 questions developed by Ögel et al. To evaluate the severity and different dimensions of addiction. It includes 5 subscales: substance use characteristics, diagnostic criteria, impact on life, craving and motivation. 0-12 points were defined as low, 12-14 points moderate, and over 14 points high severity addiction. In the analysis, it was found that the scale was valid and reliable, and the Cronbach alpha coefficient for the whole scale was 0.89 (20).

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES): It is a self-report form used to assess readiness and motivation for change in ASUD (21).Validity and reliability study of the 16-item form has been conducted in our country (22).

Traumatic Experiences Checklist (TEC): It is a self-report scale consisting of 29 types of trauma. The total scale score range is between 0-29 and estimates the number of traumatic experiences (23). The scale has been adapted to Turkish in our country (24). In our study, the Turkish version of the scoring system was used. The averages were compared by calculating the scores between the groups for presence of the traumatic experience, age of onset, the duration of the trauma, types of trauma (Emotional neglect, death or loss of a family member, life threatening/pain, divorce, indirect trauma, emotional abuse, physical abuse, sexual abuse) and the impact of the experiences (trauma score, number of traumatic experiences, between 0-29 points and trauma impact score, traumatic impact level, between 0-145 points).

Brief Psychiatric Rating Scale (BPRS): The scale was developed by Overall and Gorham in 1962; It is a semi-structured scale used to describe the severity and content of psychotic and depressive symptoms in schizophrenia and other psychotic disorders. (25) It was translated into Turkish language by Gülgün Yanbastı(26).

Statistical Analysis

SPSS version 23 program was used for statistical analysis. Descriptive statistics (frequency and ratio) were used for sociodemographic variables, chi-square for categorical variables, and Kolmogrov-Smirnov and Shapiro-Wilk normality tests were used for comparing the means. Independent samples T-test and One-Way Anova were used in normally distributed groups, Man-Whitney U test and Kruskal Wallis were used in non-normally distributed groups. Binary Logistic regression test was used to determine the predictor variables. Confidance interval, CI; 95%, $p < 0.05$ was considered statistically significant.

RESULTS

Sociodemographic Findings

A total of 51 patients were included in the study. 96.1% of the patients were male. Sociodemographic findings of the patients are shown in Table 1.

Table 1: Sociodemographic Findings

		Number (N)	Percentage (%)
Gender	Male	49	96,1
	Female	2	3,9
Marital status	Married	18	35,3
	Single	22	43,1
	Divorced/separated from spouse	11	21,5
Presence of children	Yes	26	51
	No	25	49
Educational status	Primary education	25	49
	High school	15	29,4
	University	2	3,9
People living together	Alone	10	19,6
	With his wife/children	17	31,4
	With his parents	20	39,2
	Other	4	7,8
Place of residence	Village	3	5,9
	Small town	8	15,7
	Town	40	78,4
Monthly income	?500 tl	10	19,6
	500-1500 tl	12	23,6
	?1500 tl	29	56,9
Employment status	Works regularly	22	43,2
	Not working	29	56,8

Clinical Findings

The mean age at onset of substance use was 16.90 (SD: 6.69), and the mean duration of substance use was 18.25 (SD: 12.43) years. Ten of the participants (19.6%) left the treatment early before the treatment period was completed. 20 people (39.3%) had been hospitalized at least once for ASUD, 38 (74.5%) had psychiatric admission and treatment, and 25 (49%) had at least one suicide attempt before.

In the evaluations of the patients 6 months after discharge, the slip group was included in the remission group and the lapse group in the relapse group. Eighteen (35.3%) participants were in remission and 31 (60.8%) were in early relapse, while 2 (3.9%) could not be reached. The average number of days of abstinence after discharge was determined as 89.69 days (SD: 74.85). Of the 33 people with lapses and relapses, 26 (79%) had substance use in the first 3 months, 7 patients (21%) in the third month or later.

Types of traumatic experiences

42 of the participants (82.4%) reported that they had experienced at least 1 previous trauma. The average age of traumatic experience was 22.52 (SD: 9.19), with a minimum age of 7 and a maximum of 45 years. The most common trauma was determined as neglect. The types and rates of trauma exposed are shown in Table 2.

Table 2: Presence and types of traumatic experiences

	TYPES OF TRAUMA	n	%
TRAUMATIC EXPERIENCES: YES	Emotional neglect	30	58,8
	Death or loss of a family member	24	47,1
	Life threatening/pain	28	54,9
	Divorce	12	23,5
	Indirect trauma	16	31,4
	Emotional abuse	17	33,3
	Physical abuse	18	35,3
	Sexual abuse	4	7,8
TRAUMATIC EXPERIENCES: NO		9	17,6

Substance use behavior changes after traumatic experience

33 of the participants (62.7%) showed at least one of the changes in substance use behavior (increasing the amount of use, increasing the type of substance, starting a new substance or overdosing) after experiencing trauma. These changes occurred in 21 patients (41.2%) within the first 2 weeks after trauma, and in 11 patients (21.6%) after 2 weeks.

Comparison of Remission and Relapse Groups

Sociodemographic Findings

No statistically significant difference was found between the remission and relapse groups in terms of gender, marital status, presence of children, people living together, employment status, monthly income, education status, and place of residence (CI; %95, $p>0.05$).

Clinical Findings

No significant difference was found between the remission and relapse groups in terms of mean age, age of substance use, duration of use, number of hospitalizations due to previous ASUD, early treatment withdrawal in current ASUD treatment, and previous suicide attempts ($p> 0.05$). Previous application for psychiatric treatment was found to be significantly higher in the remission group compared to the relapse group (p: 0.019).

Average scale scores

While BPRS, IES, API, SOCRATES and HAM-D total mean scores did not differ significantly between the two groups (p: 0.253, p: 0.97, p: 0.68, p: 0.87, p: 0.244, respectively), HAM-A (p: 0.015) and DES scores (p: 0.026) were significantly higher in the relapse group.

When completing the scale, 74.5% (n=38) of the patients used benzodiazepines. When the patients using and not using benzodiazepines were compared in terms of scale scores, no significant diffe-

rence was found except for BPRS scores (t:-2.023 for BPRS, p:0.049, others p>0.05)

Variables associated with traumatic experiences

The rate of experiencing at least one traumatic event in a lifetime and the mean age of traumatic experience were not significantly different between the two groups (p> 0.05). Changes in substance use behavior after traumatic experience (p: 0.014) and occurrence of this change in the first 2 weeks after trauma (p: 0.049) were significantly different between the groups. The mean of trauma scores (p: 0.04) and trauma impact scores (p: 0.01) were significantly higher in the relapse group. (Table 3)

Table 3: Co mparison of mean trauma scores and trauma impact scores in relapse and remission groups

	Relapse		Remission		P
	Mean	Sd	Mean	Sd	
Trauma scores	6,25	4,60	2,55	2,63	**0.04**
Trauma impact scores	24,77	19,58	10,77	11,43	**0.01**

Emotional neglect (p: 0.009), emotional abuse (p: 0.019) and physical abuse (p: 0.005) scores were found to be significantly higher in the relapse group, while death or loss of a family member, life-threatening/pain, divorce, sexual abuse, indirect trauma among the groups there was no significant difference (Table 4).

We have also evaluated the probable effect of medical treatment (atypical antipsychotics, buprenorphine, benzodiazepine, acamprosate, GABA analogs, antidepressants, antepileptics, and modafinil) during the detoxification period between relapse and remission groups. No significant differences were found between the groups (p>0.05)

Table 4: Comparison of types of traumatic experiences in relapse and remission groups

	Relapse		Remission		P
	Mean	SD	Mean	SD	
Emotional neglect	28,89	895,50	18,31	329,50	**0.009**
Death or loss of a family member	26,19	812,00	22,94	413,00	0.383
Life-threatening/pain	27,31	846,50	21,03	378,50	0.114
Divorce	25,32	785,00	24,44	440,00	0.781
Indirect trauma	27,32	847,00	21,00	378,00	0.067
Emotional abuse	28,03	869,00	19,78	356,00	**0.019**
Physical abuse	28,76	891,50	18,53	333,50	**0.005**
Sexual abuse	24,61	763,00	25,67	462,00	0.600

Regression model

Finally, 5 independent variables (trauma score, DES total score, HAM-A total score, history of previous psychiatric treatment, change in substance use behavior after traumatic experience) with a statistically significant difference between relapse and remission groups were included in the Binary Logistic Regression analysis to determine risk factors. Two variables that were found to be significant (trauma impact score and time of change in substance use behavior after trauma) were not included in the model because of similar variables. This model was found to be statistically significant (χ^2=33.371, p: 0.000, CI; %95), explaining -67.5 of the variance (Nagelkerke R2; 0.675). In the Hosmer-Lemeshow test, it was determined that the p value was greater than 0.05 (CI; %95, p: 0.876) and the model was suitable for regression analysis. It was determined that 89.8% of the cases were classified correctly in this model. It was found that previous admission to the hospital for psychiatric treatment was a significant predictor of remission (CI; %95, p<0.05), but other variables were not independently significant predictors (CI; %95, p>0.05).

DISCUSSION

In this study; the relation between traumatic experiences and relapses in ASUD was evaluated. The main findings of this study are the first; traumatic experience in ASUD, changes in alcohol and substance use behavior due to trauma; and the second the effects of trauma on the person differ in later relapse and remission groups. However, integration into treatment as 'applying psychiatry' seems to be the most important factor in preventing early relapses.

In our study, sociodemographic characteristics of the participants such as age, gender, educational status, and marital status were reported similar to the rates in previous studies(27, 28) . In our study, 96.1% of the participants, as in other studies, may be due to factors such as male gender, ASUD being

seen more frequently in males(2, 28) and female addicts being less likely to apply for treatment due to sociocultural (stigmatization, etc.) reasons (29). In our study, although life-time suicide attempt was found to be 49% higher than the population average in accordance with the literature, it was also higher than the data of other studies conducted in the addicted group (30-32). The high suicide attempt rate in our sample may be due to the high severity of disease because our study sample consist of inpatients (33), and 74.5% of patients had previous psychiatric diagnosesand treatment(34). Data on a suicide attempt based on self-reports may reduce the reliability of the results.

When the patients were grouped according to their early prognosis, it was learned that the early relapse rate was 60.8%. In previous studies, relapse rates varying between 50% and 90% are reported in studies investigating the course of treatment in ASUD (35, 36). When relapse is defined as alcohol or substance use once, the relapse rate is 90% (37) and when relapse is defined as the necessity of experiencing problems after substance use in addition to heavy drinking, this rate is 50% (38). In the one-year follow-up study conducted in 2012 and designed similar to our study, it was reported that 61.8% of the discharged patients were in relapse state (39). The relapse rates in our study support the literature. Although high relapse rates are associated with the chronic and recurrent nature of the disease, it also indicates the need for rehabilitation and follow-up programs after detoxification treatments in Turkiye (40, 41).

In our study, when the two groups were compared in terms of attempting suicide, no statistical significance was found in the relationship between suicide rate and early relapse ($p > 0.05$). There are conflicting results on this subject in the literature. In a 6-month follow-up study conducted with 392 heroin addicts, suicide attempt was found to be associated with relapses and, in addition, suicide attempt was reported as one of the predictors of the negative course of ASUD treatment (31). In another study conducted with 154 alcohol-dependent patients, it was reported that lifelong suicide attempts were not associated with relapse after treatment (42). Previous studies have shown the association of comorbid psychiatric pathology with high relapse rates(43). Although suicide attempt does not directly indicate a psychiatric diagnosis, high relapse rates can be expected in the group with attempted suicide, considering that it means psychopathology. On the other hand, the relationship between psychiatric admission and low relapse rates, another study result, may have led to opposite effects as a help-seeking habit, as explained below. A more straightforward explanation is that our study's high suicide attempt rate and low sample size may have caused type 2 errors.

In our study, early relapse rates were found to be significantly higher in those who did not have a history of previous psychiatric treatment. To our knowledge, there is no study investigating the relationship between the number of psychiatric treatment applications and substance use relapse in the literature. This result is due to the fact that substance users use addictive substances as self-medication (44). If they also seek a medication in a known way as psychiatric treatment to solve the problems they experience in the absence of substance use, the positive effects of psychiatric treatment may have positive effects on substance use, and the patients' high awareness of psychopathological symptoms has positive results on relapse may have come out (45).

Although it was found in the literature that comorbidity of PTSD and symptom severity were associated with relapse of substance use (6, 46), the absence of a similar relationship in our study may be due to the insufficient sample size.

Although it is known that severe addiction is associated with relapses (35), the fact that a similar relationship was not identified in our study may be due to the fact that all of the participants consisted of inpatients and mostly met the severity of moderate to severe addiction. The fact that the majority of the group that did not participate in our study had psychotic symptoms limited the sample size. The lack of difference between the groups in terms of motivation levels in the study is thought to be due to the high motivation levels of addicts receiving inpatient treatment because they voluntarily applied for treatment and volunteered to receive inpatient treatment (selection bias). In some stu-

dies in the literature, it has been reported that low motivation is associated with treatment dropout, relapse and poor prognosis (47, 48), while in some studies, similar to our study, no relationship was found between motivation and treatment prognosis (31,49).

Although it has been reported that depression symptoms increase the risk of relapse in ASUD (50, 51), and that depression affects treatment compliance adversely (52) the fact that this relationship was not confirmed in this study may be because some of our patients received antidepressant treatment during detoxification and follow-up period, the sample size was small and the follow-up period was limited to 6 months.

Although data on ASUD relapse and dissociation levels are very rare, Somer et al. suggested that dissociative psychopathology may increase the risk of relapse in opiate addicts by losing control over behavior(53). The statistically significantly higher dissociation levels in the relapse group, which is a remarkable data in our study, is a rare data that contributes to the literature.

The high level of anxiety levels and especially physical symptoms of anxiety in the relapse group supports the literature. In the study of Driessen et al., it was reported that comorbid anxiety disorder significantly increased relapse rates (54), and in other studies anxiety disorder was a predictor of relapse .

In addition to the significantly higher relapse rates in the group with substance use behavior changes after traumatic experience, these changes were frequently observed in the first 2 weeks after trauma. Although it has been reported in the literature that behavioral changes such as starting substance use after a traumatic experience and increasing the amount of use are common (44,55), there is not enough data about the effect of timing of substance use behavior change after traumatic experience on relapse. In this respect, our study offers new data. For the importance and validity of this data, it should be repeated with new studies.

High trauma scores and high trauma impact scores in the relapse group is an important data previously described in the literature. It has been reported that patients diagnosed with ASUD with a history of more severe trauma have a high relapse rate (56) and poor treatment prognosis (57). In a follow-up study similar to our study, which investigated the effects of traumatic events on relapse in cocaine addicts, it was reported that trauma severity and relapse rates were related (5). The study's results suggest that current and previous traumatic experiences of the patient with ASUD should be dealt with seriously in every session.

In our study, the rates of emotional neglect, emotional abuse, and physical abuse were significantly higher in the recurrent group. These results are significant because they show that neglect may affect the course of treatment in childhood and every period of life. In a recent 3-month follow-up study of Umut et al., it was found that emotional neglect predicted relapse (8), In the prospective study of Havel et al., domestic violence in childhood and adulthood increased the relapse rates, , and in the follow-up study of Greenfield et al., relapse rates were frequent in those with a history of sexual abuse (3). The low number of patients who gave information about sexual abuse experience in our study may have led to no significant difference between relapse and remission groups. Our study sample mainly consists of male patients. Because sexual abuse is more prevalent in female ASUD patients, it may be an explanation for this low prevalence (58).

Finally, in the Binary Logistic Regression analysis, in which relapse was taken as the dependent variable in order to determine the risk factors, it was found that the predictive power of 7 independent variables (trauma score, trauma impact score, DES total score, HAM-A total score, admission to previous psychiatric treatment, change in substance use behavior after traumatic experience, and timing of change in substance use behavior after trauma) that were found to be significantly different between the two groups (relapse and remission) in our study was statistically significant and this model predicted relapse at a rate of 67.5%. In addition to this, it was found that admission to psychiatric treatment in the past predicted remission significantly ($p < 0.05$), but other variables were not independently significant ($p > 0.05$).

Although the severity of trauma (1, 5), presence of additional psychopathology and depression symptoms (59, 60), additional anxiety symptoms (61) have been reported in some studies to predict relapse, data on this effect of dissociation are rare. Because dissociation causes loss of control in addicts,(53) and predicts impairment in psychosocial functionality (62), it is expected to be associated with relapse.

In this study, psychiatric treatment admission was found to be a significant predictor for low relapse, and other variables were not found to be significant independently. According to the Transtheoretic Model, change in ASUD is a process rather than a result, it consists of multiple stages, and change reaches the action stage in the process (63). Therefore, applying for treatment before may have prepared the appropriate conditions for change and remission. In addition, it is expected that the biggest obstacles to the success of the fight against addiction in previous studies are non-adherence to treatment (64) and perceived need for treatment (65). In this context, it highlights the importance of integrating the addicted group into treatment. Although the regression analysis results of our study seem to be in accordance with the general data, the fact that many other variables did not independently result in a significant predictor of relapse suggests that these variables have limited effects on relapses (1, 5, 59-61).

Although factors such as sociodemographic characteristics, depression and anxiety symptoms, additional psychiatric conditions, substance use severity, motivation that affect relapse in patients with ASUD are investigated with various combinations in prospective studies, prospective studies investigating the relationship of these factors with traumatic experiences and post-treatment relapse rates are rare in the literature. Most of the current studies focused on the diagnosis of PTSD rather than the history of trauma, some investigating only female patients, some only using alcohol or a specific substance.

The strengths of our study are that it focuses on the traumatic experience independent of PTSD diagnosis, includes various types of trauma, it is a prospective study and it is the first comprehensive study that has not been investigated before in the literature in which the relationship between traumatic experiences and early relapse has been investigated together with many clinical features.

On the other hand, the limitations of our study are that the retrospective evaluation of traumatic experience may impair reliability, the small number of participants, the absence of a homogenous group for addiction, the effect of comorbid condition and its treatment, the effect of the treatment received during the follow-up on relapses was not examined, the follow-up was limited to 6 months, the absence of a control group and the lack of comparison between genders due to the small number of female participants.

CONCLUSION

In this study, some results are consistent with the literature and some are the first data have been reported in Turkiye. The relationship between previous psychiatric treatment admission, dissociative experiences, change in substance use behavior after trauma and its timing with relapses in ASUD has not been previously reported in the literature. In this respect, these data need to be verified with studies involving more patients in different samples. Additionally, the results of the study suggest that traumatic experiences should be taken more seriously in ASUD treatments and referring patients to psychiatric treatment as early as possible may be effective in preventing early relapses.

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Data availability: The data sets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Evaluation of attention deficit, hyperactivity, and impulsivity symptoms in patients with type 2 diabetes mellitus

Tip 2 diyabet tanılı hastalarda dikkat eksikliği, hiperaktivite ve dürtüsellik semptomlarının değerlendirilmesi

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SUMMARY

Objective: Type 2 Diabetes Mellitus (DM) is a chronic metabolic disease and a global health problem. Inadequate glycemic control and diabetes self-management can cause many secondary diseases. There are few studies on the association between attention deficit hyperactivity disorder (ADHD) and type 2 DM. Our study compares adult and childhood ADHD symptoms and signs and impulsivity in type 2 DM patients and healthy controls. **Method:** In this case-control study, data were collected voluntarily. The study was carried out with a total of 200 participants, including 100 people in both the Type 2 diabetes group and the healthy control group. The Barratt Impulsivity Scale version 11 (BIS-11), Adult ADHD Self-Report Scale (ASRS), Wender-Utah Rating Scale (WURS) and demographic information form were applied to the participants and compared between the groups. **Results:** The mean ASRS attention score, ASRS hyperactivity score, ASRS total score, WURS total score, BIS total score of the type 2 DM group were significantly higher than the control group. Moreover, the probability of ADHD was evaluated using the cut-off scores in the ASRS and WURS scales, and it was detected in significantly more people in the type 2 DM group. **Discussion:** Our study revealed that attention deficit, hyperactivity, and impulsivity symptoms are more common in type 2 DM patients than controls. Evaluation of these symptoms may be beneficial in the self-management of diabetes and in improving glycemic control.

Key Words: Attention deficit hyperactivity disorder, impulsivity, type 2 diabetes mellitus

ÖZET

Amaç: Kronik, metabolik bir hastalık olan tip 2 Diyabetes Mellitus (DM), küresel bir sağlık sorunudur. Yetersiz diyabet özyönetimi ve glisemik kontrol birçok ikincil hastalığa sebep olabilir. Dikkatsizlik, motor hiperaktivite ve dürtüsellik ile karakterize Dikkat Eksikliği Hiperaktivite Bozukluğu (DEHB) ve tip 2 DM arasındaki ilişki hakkında yeterince çalışma yoktur. Çalışmamızda tip 2 DM hastalarında ve sağlıklı kontrollerde erişkin ve çocukluk çağındaki DEHB belirti ve bulguları ile dürtüselliği karşılaştırmayı amaçladık. **Yöntem:** Araştırmamız bir olgu-kontrol çalışması olup veriler gönüllü katılım esasına göre toplandı. Çalışma Tip 2 diyabet ve sağlıklı kontrol grubunda 100 kişi olmak üzere toplam 200 katılımcı ile gerçekleştirildi. Çalışmaya alınan katılımcılara Erişkin Dikkat Eksikliği Hiperaktivite Bozukluğu Öz Bildirim Ölçeği (EDHÖ), Wender-Utah Derecelendirme Ölçeği (WUDÖ), Barratt Dürtüsellik Ölçeği 11. versiyon (BIS-11), demografik bilgi formu uygulandı ve gruplar arasında karşılaştırıldı. **Bulgular:** Tip 2 DM grubunun ortalama EDHÖ dikkat puanı, EDHÖ hiperaktivite puanı, EDHÖ toplam puanı, WUDÖ toplam puanı, BDÖ toplam puanı, kontrol grubuna göre anlamlı olarak yüksek bulundu. Ayrıca EDHÖ, WUDÖ ölçeklerinde kesme puanlar kullanılarak DEHB olasılığı değerlendirildi ve tip 2 DM grubunda anlamlı olarak daha fazla kişide tespit edildi. **Sonuç:** Çalışmamızda tip 2 DM hastalarında dikkat eksikliği, hiperaktivite ve dürtüsellik semptomları kontrollere göre daha fazla bulundu. Diyabetin öz yönetiminde ve glisemik kontrolün iyileştirilmesinde bu semptomların değerlendirilmesi faydalı olabilir.

Anahtar Sözcükler: Dikkat eksikliği hiperaktivite bozukluğu, dürtüsellik, tip 2 diyabet

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INTRODUCTION

Diabetes mellitus (DM) is an increase in blood glucose due to insufficient secretion of insulin or insufficient use of secreted insulin (1). Type 2 DM, which constitutes 90% of diabetes patients and manifests itself with insufficient insulin function, is a global health problem with increasing prevalence and incidence rates every year (2,3). Mismanagement of diabetes that results in high blood sugar can cause several secondary diseases. The risk of heart attack increases up to 200% in patients with diabetes (4). In severe cases, inadequate glycemic control can result in foot infections and limb amputations (5). In addition, diabetes can cause kidney failure and stroke (6,7). Comorbid somatic diseases and psychological disorders related to diabetes can also be seen (8).

Impulsivity manifests itself in behaviors that lack adequate reflection and foresight. The diagnosis of type 2 diabetes is associated with impulse control disorders, especially eating disorders (9). Moreover, impulsivity has been identified as potential risk factor for developing type 2 DM (9). These findings suggest that impulsivity may impair diabetes self-management through lack of planning and inadequate behavioral regulation.

Attention Deficit Hyperactivity Disorder (ADHD) is a chronic neuropsychiatric disorder that begins in childhood and is characterized by attention deficit, impulsive behavior and hyperactivity (10). ADHD symptoms typically appear in childhood, and approximately 50% of these symptoms are carried over to adulthood (11,12). Studies have reported an increase in the prevalence of ADHD in recent years (13). In parallel, childhood obesity has been increasing over the past years. The comorbidity of ADHD and obesity has been evaluated. Despite the contradictory findings in the studies, meta-analytical evidence indicates a significant relationship between ADHD and obesity, independent of psychiatric comorbidity (14). The relationship between obesity, metabolic syndrome, and ADHD is well known. However, the relationship between ADHD and diabetes, one of the metabolic syndrome components, is not well established.

The present study compares adult and childhood ADHD symptoms and signs and impulsivity in healthy controls and type 2 DM patients.

METHOD

The study was carried out in the internal medicine outpatient clinic of Kafkas University Research Hospital between April 1, 2020, and January 1, 2021. All procedures were performed under the 1964 Declaration of Helsinki and its subsequent amendments, and the Ethics Committee approved the study of Kafkas University Faculty of Medicine at session 04, dated February 2, 2020.

Participants

The patient group (n=99) of this study consists of individuals older than 18 years of age and at least a primary school graduate who applied to the Internal Medicine outpatient clinic of Kafkas University Research and Application Hospital and were diagnosed with type 2 DM for at least one year. A control group was formed with 100 age- and gender-matched healthy individuals. Those with comorbid psychotic, neurocognitive, substance use disorders, or psychotropic drug use were excluded.

Data Collection Tools

Social and Demographic Factors: Initially, the age, gender, education level, and marital status of all participants were assessed using a sociodemographic questionnaire prepared by the researchers.

Adult Attention Deficit Hyperactivity Disorder (ADHD) Self-Report Scale (ASRS): It was developed by the World Health Organization (15). It has two subscales; hyperactivity/impulsivity and attention deficit. It is a five-point Likert-type scale, in which each item is rated between 0 and 4. Those with a total score of 24 or higher on either of the two subscales were considered "highly likely to have ADHD," 17-23 "likely to have ADHD," and 0-16 "unlikely to have ADHD." This scale has a Turkish validity and reliability study (16).

Wender-Utah Rating Scale (WURS): It was designed

to evaluate the childhood signs and symptoms of ADHD in adults. The self-report scale is in five-point Likert-type, consisting of 25 items, in which each item is rated between 0 and 4. The cut-off score for the diagnosis of ADHD is accepted as 36 and above. The Turkish validity and reliability of the scale were established, and the cut-off point was determined as 36 (17).

Barratt Impulsivity Scale version 11 (BIS-11): It was developed to measure impulsivity. BIS-11 is a 4-point Likert-type scale in which each item is rated between 1 and 4. This scale has a Turkish validity and reliability study (18).

Data Evaluation

The data were evaluated using the SPSS (24.0) software package. The data were presented in tables as the number of individuals, percentage, arithmetic mean, and standard deviation. Statistical significance level was determined as 0.05.Kolmogorov Smirnov test, kurtosis, and skewness values were used to assess the conformity of the data to normal distribution. The independent sample t-test was used to determine the difference between the means of the two groups, and the Chi-square test was used for categorical variables.

RESULTS

The study consisted of 54 women and 45 men (n = 99) in the type 2 DM group and 56 women and 44 men (n = 100) in the control group. The mean age of participants was 56.30±9.63 years in the type 2 DM group and 57.42±6.19 years in the control group. The mean education period was 7.36±2.91 years in the type 2 DM group and 6.70±2.09 years in the control group. There were five alcohol users, 18 smokers in the type 2 DM group, six alcohol users, 20 smokers in the control group. There was no statistically significant difference between the groups in terms of age, education, gender, alcohol, and cigarette use (p=0.332, p=0.660, p=0837, p=0.769, p=0.744, respectively) (Table 1). The mean Body mass index (BMI) was 30.98±4.81 in the type 2 DM group and 26.39±3.70 in the control group. In the type 2 DM group, 76 were married, 23 were unmarried; in the control group, 92 were married, and eight were unmarried. A significant difference was detected between the groups in terms of BMI and marital status (p<0.001 and p=0.03, respectively) (Table 1).

Table 1. Demographic Characteristics of Type 2 DM and Control Groups

		Type 2 DM Group n=99	Control Group n=100	p
Age (Mean–Sd)		56.30–9.63	57.42–6.19	0.332
Education (Year) (Mean–Sd)		7.36–2.91	6.70–2.09	0.660
BMI (Mean–Sd)		30,98–4,81	26.39–3.70	<0.001
		n (%)	n (%)	
Gender	Female	54 (54.5)	56 (56)	
	Male	45 (45.5)	44 (44)	0.837
Smoking		18 (18.2)	20 (20)	0.744
Uses alcohol		5 (5.1)	6 (6)	0.769
Marital Status	Married	76 (76.8)	92 (92)	
	Single	23 (23.2)	8 (8)	0.03

Sd : Standart Deviation, BM : Body Mass Index, p<0.05

The mean ASRS attention score of the type 2 DM group was 13.19±6.14, ASRS hyperactivity score was 14.71±5.70, ASRS total score was 28.24±11.07, WURS total score was 37.24±17.87, BIS total score was 61.55±10.78; the mean ASRS attention score of the control group was 7.04±3.97, ASRS hyperactivity score was 4.82±4.38, ASRS total score was 12.86±9.74, WURS total score was 15.02±9.53, BIS total score was 51.46±8.76, and there was a statistically significant difference between the groups (all p<0.001) (Table 2).

Those who scored 24 points or more from any of the two subscales of ASRS (ASRS (24)) were 13 in the type 2 DM group, 4 in the control group; those who scored 17 or higher (ASRS (17)) were 42 in the type 2 DM group, 9 in the control group; those who scored 36 or more in the total WURS score

Table 2. Comparison of Type 2 DM andControl Groups According to ASRS, WURS, BIS Scores

	Type 2 DM Group n=99	Control Group n=100	P
	Mean–Sd	Mean–Sd	
ASRS attention	13,.19–6.14	7.04–3.97	<0.001
ASRS hyperactivity	14.71–5.70	4.82–4.38	<0.001
ASRS Total	28.24–11.07	12.86–9.74	<0.001
WURS Total	37.24–17.87	15.02–9.53	<0.001
BIS-11 Total	61.55–10.78	51.46–8.76	<0.001

BIS-11: Barratt Impulsivity Scale version 11, ASRS: attention deficit hyperactivity disorder Self-Report Scale, Sd:Standart Deviation, WURS: Wender-Utah rating scale

Table 3. Comparison of Type 2 DM and Control Groups According to ASRS and WURS Cut-off Scores

	Type 2 DM Group n=99	Control Group n=100	p
Scales (cutscore)	n (%)	n (%)	
ASRS (24)	13 (13.1)	4 (4)	0.02
ASRS (17)	42 (42.4)	9 (9)	<0.001
WURS (36)	41 (41.4)	6 (6)	<0.001

ASRS: attention deficit hyperactivity disorder Self -Report Scale , WURS: Wender -Utah rating scale

(WURS (36)) were 41 in the type 2 DM group, 6 in the control group. Comparison using these cut-off scores revealed a statistically significant difference between the groups (p =0.02, p<0.001 and p0.001, respectively) (Table 3).

DISCUSSION

This case-control study compared the type 2 DM and control groups regarding attention deficit, hyperactivity, and impulsivity symptom scores using the ASRS, WURS, and BIS scales and revealed significantly higher in the type 2 DM group. In addition, evaluating the ASRS and WURS scales according to the cut-off scores determined for the diagnosis of ADHD revealed that the number of people diagnosed with ADHD was significantly higher in the type 2 DM group than in the control group.

The diagnosis of type 2 diabetes has been associated with impulse control disorders (9). Impulsivity has been evaluated as a risk factor for the development of type 2 DM(19-21). Besides, Eckstrand et al. linked food stimuli-related impulsivity to high insulin resistance (22). Our study also determined a significantly higher impulsivity score in type 2 DM patients than in the control group. As impulsivity may impair diabetes self-management, its assessment is crucial in patients with type 2 DM.

There are only a limited number of studies evaluating the relationship between ADHD and type 2 DM. A study examining the Swedish national health registry to investigate the relationship between adult ADHD and metabolic disease reported a higher prevalence of type 2 DM in adults with ADHD than those without ADHD (23). A study conducted in Taiwan in which adolescents and young adults with ADHD were followed up to 9 years found that those diagnosed with ADHD had a higher risk of developing type 2 DM than controls (24). Considering these studies, the results of our study are consistent with the literature.

In adults with type 2 DM, decreased white matter volume and cortical/subcortical atrophy were detected, especially in the frontal region (25,26). The deterioration in cognitive functions in patients with type 2 DM was also associated with the decreased blood circulation of the frontal and parietal lobes (27). Damage to these regions can cause attention deficit, disorders in emotion regulation, and behavioral deterioration.

In ADHD, attention deficit, hyperactivity and disturbance in emotion regulation are seen. According to various neuroimaging studies, the lateral and medial prefrontal cortices, the lateral-inferior parietal and parietal-temporal-occipital cortices on the surface of the right hemisphere, and the cortico-striatal and cortico-cerebellar networks form the center of attention in the brain (28,29). These areas play a role in the formation of cognitive, emotional, and behavioral functions (30). Type 2 DM most commonly affects the frontal and hippocampus areas, explaining the risk of later developing ADHD symptoms.

Our study has limitations. The small number of cases in the patient and control groups can be considered a relative limitation. However, a preliminary power analysis was performed using G*Power3.1 to test the difference between the mean of two independent groups using the medium effect size (d= 0.50) and alpha=0.05. Accordingly, a total of 128 participants was required, with two equally sized groups of n=64 to achieve a power of 0.80. According to this a priori power analysis, our sample size can be considered sufficient. Another limitation of our study is the use of self-evaluation questionnaires without a diagnosis by a psychiatrist. Future studies to be conducted with larger sample groups using psychiatric interviews can provide more precise results.

CONCLUSION

Our study shows that attention deficit, hyperactivity, and impulsivity symptoms are more frequent in type 2 DM patients than controls. These symptoms may be risk factors for type 2 DM patients or adversely affect treatment compliance. Easy-to-use questionnaire-based patient screening can be made to support diabetes management by developing interventions tailored to these symptoms. This, in turn, can enable diabetes self-management and blood sugar control.

Conflicts of interest: The authors declare that they have no conflict of interest.

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