Original article / *Araştırma*

Rates of distribution of psychiatric disorders, hepatitis seroprevalence and illicit substance usage among adults aged 50 years and over in Turkey: a regional representative study

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ABSTRACT

Objective: *This study examined the major admission etiologies (according to ICD-10 codes), illicit drug use rates and hepatitis seroprevalence of patients 50 age and over admitted to a mental hospital in Elazig, Turkey.* ***Methods:*** *The medical records of 2608 outpatients/inpatient aged ≥50 years admitted to a mental hospital in Elazığ between January 01st 2016 and September 30th 2018 were retrospectively examined.* ***Results:*** *Rates of admission etiologies were as follows; for the patient group without any psychiatric diagnosis, followed by recommendation without any medical treatment because of non-specific psychiatric complaints (general examinations, 22.7%), alcohol/substance analyzes (17.6%), bipolar disorders (14.3%), schizophrenia (13.7%) and depression (13.2%).In the 50-59 years age group, the most common reason for admission was alcohol/drug screening for probation and forensic evaluation (20.4%). In the 60−69 and >70 years age groups, depression was the most common admission reason (16.7% and 22%, respectively). Cannabinoids were the most frequently detected substance (11.4% of patients), followed by opiates (3.8%), benzodiazepines (3.5%), amphetamines (2.2%) and cocaine (1.8%). Anti-HBs, HBsAg and anti-HCV were detected as positive by 51.2%, 5.4% and 1.3%, respectively. Anti-HCV rate of substance-depended patients was significantly higher than in the entire study population.* ***Discussion:*** *This study showed that alcohol/substance analysis was more common among people aged 50 years and older than bipolar disorder, schizophrenia and depression. It was found that cannabinoids were detected in 11.4% of the drug analyzes in individuals aged 50 years or older and the anti-HCV ratios of patients receiving treatment at the substance addiction center were higher than the other patients.* ***(Anatolian Journal of Psychiatry 2019; 20(6):635-641)***

Keywords: *serology, elderly, substance use, hepatitis, depression, psychiatric disorder*

Türkiye'de 50 yaş ve üstü yetişkinler arasında psikiyatrik bozuklukların, hepatit seroprevalansının ve yasa dışı madde kullanım oranlarının dağılımı: Bölgesel temsili bir çalışma

ÖZ

Amaç: *Bu çalışma, Türkiye'nin Elazığ ilinde bulunan bir akıl sağlığı hastanesine kabul edilen 50 yaş ve üzeri hastaların ana kabul etiyolojileri (ICD-10 kodlarına göre), yasa dışı uyuşturucu kullanım oranları ve hepatit seroprevalansları incelemeyi amaçlamıştır.* ***Yöntem:*** *01.01.2016-30.09.2018 tarihleri arasında Elazığ'daki ruh hastalıkları hastanesinde ayaktan başvurarak/yatarak tedavi edilen 50 yaş ve üstündeki 2608 hastanın kayıtları geriye dönük olarak incelendi.* ***Bulgular:*** *Hasta kabul oranları bu şekildeydi; psikiyatrik tanısı olmadan, özgül olmayan psikiyatrik yakın-*

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maları nedeniyle tıbbi tedavi planlanmadan öneri ile izlenen hasta grubu (%22.79), alkol/madde analizleri (%17.6), bipolar bozukluk (%14.3), şizofreni (%13.7) ve depresyon (%13.2). 50-59 yaş grubunda, başvuru için en yaygın neden, denetim ve adli değerlendirme amaçlı alkol/madde taramasıydı (%20.4). 60-69 ve ≥70 yaş gruplarında en sık başvuru nedeni depresyondu (sırasıyla %16.7 ve %22). En sık saptanan uyuşturucu kannabinoidler (hastaların %11.4'ü), ardından sırasıyla afyonlar (%3.8), benzodiyazepinler (%3.5), amfetaminler (%2.2) ve kokain (%1.8) idi. Anti-HBs %51.2, HBsAg %5.4 ve anti-HCV %1.3 oranında pozitif tespit edildi. Madde bağımlılığı merkezinde tedavi alan hastaların anti-HCV oranları diğer hastalardan anlamlı olarak daha yüksekti. ***Tartışma:*** *Bu çalışma 50 yaş ve üstü insanlar arasında alkol/madde analizleri nedeniyle başvurunun bipolar bozukluk, şizofreni ve depresyondan daha fazla olduğunu, 50 yaş ve üstü bireylerde madde analizi yapılanların %11.4'ünde kannabinoid tespit edildiğini ve madde bağımlılığı merkezinde tedavi alan hastaların anti-HCV oranlarının diğer hastalardan yüksek olduğunu göstermiştir.* ***(Anadolu Psikiyatri Derg 2019; 20(6):635-641)***

Anahtar sözcükler: *Seroloji, yaşlılık, Madde kullanımı, hepatit, , depresyon, psikiyatrik bozukluk*

INTRODUCTION

Aging is an irreversible natural process that causes death overtime in all biological systems.[1] Due to advances in medicine, improved quality of life and increased economic prosperities, the global elderly population is increasing rapidly. It was reported that by 2050, 80% of the estimated elderly will be living in developing countries.[2,3] In India, for instance by 2050, the elderly population is estimated to increase by 40%.[4] In Turkey, the population of people aged ≥65 years is predicted to increase by 20.8% from 2014 to 2050.[5] Due to the increase in the elderly population, age-related medical and social problems are also increasing; therefore, the analysis of mental health problems specific to the elderly is critical.

The elderly are prone to declines in both physical and mental health; dementia, depression, anxiety, substance use disorders are among the most common mental disorders in the elderly.[1,6,7] However, several geographic, sociocultural, occupational and lifestyle factors reportedly have a significant impact on mental health.[8-10] Therefore, mental health profiles may substantially differ among countries and regions. In a study carried out in Erzurum in 2001-2002, it was reported that the rate of depression in 65 patients over 65 years was 58.8%.[11] In 2008, 1019 patients aged 70 years and over were found to have 11% Alzheimer and 20% dementia.[12] Similarly, the rate of High depressive symptoms was reported to be 50% in the study conducted in Istanbul over 55 years of age.[13] In a study conducted in Trabzon aged 55 and over, the prevalence of depression was found to be 13.6% and the prevalence of cognitive impairment was 17.1%.[14] It is also frequently more difficult to manage psychiatric disorders in the elderly due to high comorbidity rates and neurocognitive degenerative processes. Moreover, psychiatric symptoms may be obscured by chronic disease symptoms and the use of medications in the elderly.[15]

In a previously study was reported that epidemiological studies in the elderly are particularly important for determining prevalence and health policies due to increase of the aging population in Turkey.[16] Therefore, comprehensive studies on mental health issues specific to the 50 age and over population are needed. The current study examined the distribution of psychiatric disorders, substance abuse rates and hepatitis seroprevalences in individuals 50 aged and over treated at a mental health hospital serving the eastern region of Turkey from 2016 to 2018. Although the people aged >65 years were considered as geriatric population, patients aged 50 years and older were included in this study, in order to provide an overview for the coming years especially in terms of substance use.

METHODS

To provide a perspective for the coming years, all outpatients/inpatients aged ≥50 years admitted to a mental hospital between January 01st 2016 and September 30th 2018 were included in the study. The etiological distribution was evaluated according to ICD-10 codes, illicit drug use rates and hepatitis serology profiles obtained from the hospital/laboratory information system. In patients with more than one test result, only the first test result was included. Patients were evaluated for admission etiology, illicit substance use and hepatitis infection according to age (50-59, 60-69 and ≥70 years) and sex. The study was approved by the Ethics Committee of Fırat University (date: December, 20th 2018; number:19).

Blood samples were collected from all patients and analyzed at the Center Clinical Laboratory of the Elazig Education and Research Hospital according to a standard protocol. HBsAg, anti-HBs and anti-HCV tests were analyzed using the

Advia Centaur XP system (Siemens, USA).

Specimens with cut-off index <1 were considered negative and those with cut-off index ≥1 were considered positive for HBsAg and anti-HCV. Samples <10 mIU/ml were considered negative and values >10 mIU/ml were considered positive for anti-HBs. Urine samples that were obtained from all patients were analyzed for cannabis and opioid metabolites at the clinical laboratory of the hospital. All drug detection assays were performed using the Cobas Integra 400 system (Roche Diagnostics, Mannheim, Germany) by the kinetic interaction of micro particles in solution method (KIMS, Roche Diagnostics). Ethanol levels were analyzed by the alcohol dehydrogenase method using the Cobas c501 system (Roche Diagnostics).

All statistical analyses were performed by using SSPS 20 (SPSS Inc., Chicago, IL, USA). Normality of distribution was checked by visual (histograms/probability plots) and analytical (Kolmogorov-Smirnov/Shapiro-Wilk's tests) techniques. Categorical data were compared between groups by the chi-square. Kruskal-Wallis test was conducted to compare numerical parameters, not normally distributed, in three or more groups. The Mann-Whitney U test was performed to test the significance of pairwise differences using Bonferroni correction to adjust for multiple comparisons test. $p<0.05$ (two-tailed) was considered statistically significant for all tests.

RESULTS

Demographic data and the rate of psychiatric disorders

A total of 2608 patients aged ≥50 were enrolled in this study, with significant male predominance (1916 males and 692 females, $p<0.001$). The largest age group was 50-59 years (1716, 65.8%), followed by the 60-69 (660, 25.3%) and >70 years age groups (232, 8.9%). There was a significant decrease in admissions across the three study years (43.4% of the 2608 patients were admitted in 2016, 31.9% in 2017 and 24.7% in 2018; $p<0.001$). The rate of admission etiologies according to ICD-10 codes in database of hospital was as follows; 22.7% for the patient group without any psychiatric diagnosis, followed by recommendation without any medical treatment because of non-specific psychiatric complaints (general examination), 17.6% for alcohol/drug analyses, 14.3% for bipolar disorder, 13.7% for schizophrenia and 13.2% for depression (Table 1). In the 50-59 years age group, the most common admission cause was alcohol/drug screening (20.4%) while depression was the most common in the 60-69 years age group (16.7%) and >70 years age group (22%). Admissions for schizophrenia, bipolar disorder and alcohol substance analyses decreased with age, whereas admissions for depression, anxiety, non-organic psychosis and mood disorders except bipolar disorder increased with age. In

Table 1. Reasons of elderly patients admitted to a mental health hospital in the elderly according to age, gender, and years

Disorders (ICD-10)	50-59 %	60-69 %	≥70 %	Male %	Female %	2016 %	2017 %	2018 %	Total %
Schizophrenia	15	13	6.5	14.1	12.7	19.5	9.5	9.2	13.7
Alcohol use disorders	1.5	1.7	0.4	1.9	0.1	1.8	1.1	1.2	1.4
Illicit drug use	1.3	0.6	0.4	1.5	0	1.1	1.6	0.5	1.1
General Inspections	22.3	22	27.6	27.2	10.1	16.9	25.3	29.5	22.7
Alcohol/drug analysis	20.5	14.4	5.2	23.6	0.7	14.0	19.9	20.8	17.6
Bipolar disorders	14.2	15.3	12.1	11.2	23.0	20.0	11.6	7.8	14.3
Depression	10.7	16.7	22.0	7.2	29.9	13.4	13.3	12.6	13.2
Schizoaffective disorders	1.4	1.1	0.4	1.3	1.2	1.2	1.2	1.2	1.2
Obsessive compulsive disorder	0.8	1.1	0	0.3	2.2	0.9	0.7	0.8	0.8
Anxiety disorders	5.4	7.7	12.1	4.2	13.2	5.0	8.2	7.3	6.6
Non-organic psychoses	4.0	3.6	3.0	4.3	2.3	3.4	4.0	4.3	3.8
Mood disorders	0.3	0.5	1.3	0.4	0.6	0.4	0.1	1.1	0.5
Others	2.6	2.6	9.0	2.5	3.9	2.7	3.5	3.7	3.1
Total %	65.80	25.30	8.90	73.50	26.5	43.40	31.90	24.70	100.0
n	1716	660	232	1916	692	1131	833	644*	2608

*Kruskal-Wallis test was conducted. *: Statistically different according to years, $p<0.001$*

female patients, the most common reason for admission was depression (29.9%), whereas those in males were general examinations (27.2%), alcohol/drug analyses (23.6%) and schizophrenia (14.1%). Admission numbers for general examinations and alcohol/drug analyses increased each year (Table 1).

Prevalence of substance use

According to urinalysis, the most frequently detected illicit substances in the 50-59 years age group were cannabinoids (11.4%), opiates (3.8%), benzodiazepines (3.5%), amphetamines (2.2%) and cocaine (1.8%) (Table 2). Among the 102 patients who tested positive for cannabinoids, 78.4% were in the 50-59 years age group, 18.6% in the 60-69 years age group and 2.9% in the >70 years age group. Although the total number of patients admitted decreased from 2016 to 2018, there was an increase in illicit substance use admissions over this same period (Table 2). Cocaine use increased significantly between 2016 and 2018 ($p<0.001$). Most drug users were admitted for general examinations and alcohol/drug analyses. Blood alcohol analysis was performed in 136 out of 2608 patients and blood alcohol level was above 50 mg/dl in 8 out of 136 patients (5.9%). Except for two female patients, all patients who were detected as substance positive in urine analysis were male (Table 2).

Table 2. Illicit drugs used by elderly patients admitted to a mental health hospital from 2016 to 2018 according to age, gender, and year

	2016	2017	2018	Male	Female	50−59	60−69	>70
Total (n)	283	318	290	202	9	646	209	36
Amphetamines (n/%)	3/1.1	6/1.9	11/3.8	18/2.0	2/22.2	17/2.6	3/1.4	0
Benzodiazepines (n/%)	8/2.8	12/3.8	12/4.1	32/3.6	0	24/3.7	7/3.3	1/2.8
Cannabinoids (n/%)	30/10.6	32/10.0	40/13.8	102/11.6	0	80/12.4	19/9.1	3/8.3
Cocaine (n/%)	1/0.4	1/0.3	14/4.8*	16/1.8	0	14/2.2	2/1.0	0
Opioids (n/%)	11/3.9	7/2.2	16/5.5	34/3.9	0	26/4.0	8/3.8	0

*Kruskal-Wallis test was conducted. * Statistically different according to years; p<0.001.*

Hepatitis seroprevalences

The anti-HBs test was performed in 778 patients, HBsAg in 779, and anti-HCV in 750. Among these patients, 398 tested positive for anti-HBs (51.2%, n=398), 42 for HBsAg (5.4%) and 10 for anti-HCV (1.3%) (Table 3). Among the 24 f

Table 3. Detection frequencies of hepatitis markers in elderly patients admitted to a mental health hospital from 2016 to 2018 stratified by age and gender

	Anti-HBs			HBsAg			Anti-HCV		
	Positive n (%)	Negative n (%)	Total n	Positive n (%)	Negative n (%)	Total n	Positive n (%)	Negative n (%)	Total n
50−59 years	253 (49.9)	254 (50.1)	507	27 (5.3)	484 (94.7)	511	8 (1.6)	483 (98.4)	491
60−69 years	103 (51.8)	96 (48.2)	199	13 (6.6)	185 (93.4)	198	1 (0.5)	188 (99.5)	189
>70 years	42 (58.3)	30 (41.7)	72	2 (2.9)	68 (97.1)	70	1 (1.4)	69 (98.6)	70
Male	295 (53.6)	255 (46.4)	550	31 (5.6)*	523 (94.4)	554	10 (1.9)	522 (98.1)	532
Female	103 (45.2)	125 (54.8)	228	11 (4.9)	214 (95.1)	225	0	218 (100.0)	218
2016	189 (53.7)	163 (46.3)	352	19 (5.4)	336 (94.6)	355	5 (1.4)	346 (98.6)	351
2017	120 (51.1)	115 (48.9)	235	10 (4.2)	226 (95.8)	236	2 (0.9)	221 (99.1)	223
2018	89 (46.6)	102 (53.4)	191	13 (6.9)	175 (93.1)	188	3 (1.7)	173 (98.3)	176
Total	398 (51.2)	380 (48.8)	778	42 (5.4)	737 (94.6)	779	10 (1.3)	740 (98.7)	750

*Kruskal-Wallis test was conducted. *: Statistically different from the female group, p=0.032*

patients admitted to the hospital for treatment of drug addiction, one tested positive for HBsAg (4.2%) and three for anti-HCV (12.5%). Anti-HCV rate of drug addiction patients was significantly higher than in the entire study population (p<0.001). In the entire population, HBsAg-positive and anti-HCV rates were significantly higher in males than females (p=0.032).

DISCUSSION

Many studies have examined the frequency of psychiatric disorders in elderly populations;[17, 18] however, to our knowledge, the current study is the first study which was conducted to examine the admission etiology distribution rates of 50 age and over patients using official records at a psychiatric hospital in Turkey. The Mental Health Hospital accepts patients from 18 neighboring towns/cities in Eastern and Southeastern Anatolia. Considering that ethnicity and culture differences area strong independent risk factors for certain psychiatric disorders, this study provides important data on psychiatric disease rate in population in Turkey.[6,19-21] In this study, the most frequent reasons for admission, after general examinations, were blood alcohol/drug analyses, bipolar disorder, schizophrenia and depression. General examinations included patients who were followed up with recommendation instead of arranging medical treatment, with nonspecific psychiatric complaints and no have a psychiatric diagnose. A study conducted in France, aged 60 years and over population researched current and lifetime prevalence of DSM-IV psychiatric disorders and reported that lifetime prevalence of major depression, anxiety disorders and psychosis were 26.5%, 30%, 4.7%, respectively.[22] A previous study conducted in Turkey reported that 17.1% of the elderly population exhibits some type of anxiety disorder,[18] whereas only 6.6% of patients were admitted with a diagnosis of anxiety disorder in our study. Another study examining the prevalence of depression in the elderly Turkish population has reported that 29% of those living in their own homes had depression versus 35% of the entire elderly population and 41% of the elderly living in nursing homes.[17] Although depression and anxiety are common in elderly population, this study observed that patient admission due to drug analysis was higher than depression, schizophrenia and anxiety. The higher of alcohol/drug analysis admission etiologies also could be relative with the patients admission due to pre-employment and workplace drug screening. In our study, depression, anxiety disorders and schizophrenia were the most common admission reasons in females; whereas, after general examinations, alcohol/drug analyses, schizophrenia and depression were the most common admission reasons in males. These results were consistent with Reynolds et al.[6] They have reported that mood and anxiety disorders are more frequent in elderly females, whereas illicit substance use and personality disorders were more frequent in males.[6] In their study, the incidences of mood, anxiety, substance abuse and personality disorders decreased with age. In our study, the rates of schizophrenia, bipolar disorder and alcohol/drug detection decreased with age, whereas the rates of depression, anxiety, non-organic psychosis and mood disorders increased with age. In our study according to ICD-10 code, the rate of depression was markedly higher in females (29.9%) than in males (7.2%) and in the entire population (13.2%). Substance use disorders are common among the elderly and are becoming a major public health concern.[7,23,24] It is estimated that the rate of substance abuse among Americans people aged ≥50 will increase exponentially to 5.7 million by 2020;[21] however, data on this issue in the elderly Turkish population is insufficient.[7] Since this is a retrospective study, only patients who undergo an ethanol and illicit drug evaluation were examined. According to this, in the current study, 891 patients aged ≥50 years were screened for drugs. Cannabinoids were the most frequently detected drugs in the entire cohort (n=102, 11.4%), and the greatest proportion of users were in the 50-59 age group. The second most commonly used agents were opioids followed by benzodiazepines, amphetamines and cocaine. Çatak et al. have evaluated the prevalence of illicit substance use in 2015 and 2016 based on laboratory data from the same hospital where the current study was conducted and reported the rate of using cannabinoid was 8.2% in the 50-59 years age group and 6.1% in the >60 years age group.[25] While these rates are lower than those detected in the current study (12.4% in 50-59 years age group, 9.1% in 60-69 years age group and 8.3% in >70 years age group), both studies suggest that the prevalence of illicit substance use among the elderly will increase in the future. The increase in the number of admission for alcohol/drug analyses over the years can be considered an indicator of the increasing frequency of substance use among the elderly. Illicit substance use was especially high in the younger age group. According to our laboratory records, alcohol was detected in 5.8% out of 136

the patients. Turkey ranks 137 out of 185 countries in alcohol consumption.[7]

This low rate is due to prevailing religious beliefs and the associated social taboo, which may reduce reporting.[7] Elderly substance abusers may present with different symptoms compared with younger abusers and thus may be more difficult to diagnose. In addition, older adults are more susceptible to adverse medical outcomes caused by substance abuse than younger people.[26] Therefore, additional comprehensive studies evaluating illicit substance abuse among the elderly are warranted. We also propose that the forms used routinely for anamnesis be expanded to include more detail on the use of these substances.[24] More effective service programs are needed in the coming years to meet the needs of elderly drug users.[7,21] Since these data were obtained from a mental health hospital it is not representative of the frequency of drug use in the entire region. However this data provide an overview of actively drug using of 50 age and over Turkish patients admitted to a psychiatric facility in that region.

Several studies have reported high frequencies of hepatitis B and C in hospitalized psychiatric patients.[27-29] In a previous study from the same hospital, anti-HCV and HBsAg reactivity rates were 23.5% and 5.9%, respectively, among 276 substance addicts aged ≥50 years, underscoring the high frequency of hepatitis C infection among drug users.[30] In the current study, anti-HCV detection rate was more common in substance depended patients than in the entire population. As the frequency of substance abuse increases, the risk of infections from blood-borne pathogens may possibly rise due to needle sharing practices. Indeed, injection drug users (IDUs) are the highest risk group for HCV transmission. In the United States, approximately 70-80% of new HCV cases each year are IDUs.[31] In psychiatric hospitals and care homes where psychiatric patients live collectively, protective measures against HBV/HCV infection should be instituted and both patient and staff education improved. Further, health personnel and patients should be vaccinated against hepatitis B.

This study is limited by its retrospective design. Patients with multiple psychiatric diagnoses could not be evaluated. Only patients with screening tests can be evaluated for drug use and hepatitis frequency. False positives and negatives could not be evaluated because drug testing was not verified by gas chromatography/ mass spectrometry. Furthermore, benzodiazepine use rates may not reflect actual abuse rates as these agents are used for therapeutic purposes for hepatitis B serology, previous disease and vaccinations could not be evaluated in patients as the HBcAg (core antigen) test was not performed.

Despite these limitations, our study demonstrates that psychiatric diseases such as depression, anxiety disorders, bipolar disorder, schizophrenia and substance use disorders are common among the people of 50 age and over living in the eastern region of Turkey. In this respect, these findings could help guide future etiological research. In addition, this study demonstrates frequent drug use among elderly psychiatric patients and a relationship between substance use and hepatitis C infection. These results may help in the diagnosis, follow-up and treatment of psychiatric disorders and provide for improving regulations against drugs abuse in the 50 age and over.

Authors' contributions: *Z.Ç.: concept, literature review, design, surgical and medical practices, data collection, writing; E.Ü.: concept, literature review, data collection, analysis; N.Ö.: design, data collection, analysis; K.U.: design, analysis; S.A.: design, analysis,*

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