Indonesian Journal of Medicine (2023), 08(02): 204-218
Masters Program in Public Health, Universitas Sebelas Maret

Research

Epidemiological Analysis of Mental Health Disorders in Patients at Psychiatric Hospitals in the Special Region of Yogyakarta, Indonesia

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ABSTRACT

Background: Mental disorder is a condition of decreasing all psychiatric conditions that result in deviant behavior. WHO estimates that one in eight people in the world live with a mental disorder in the world. The COVID-19 pandemic that has occurred since 2019 has had an impact and has had a major impact on the mental health of people in the world and in Indonesia. The Special Region of Yogyakarta is the province with the highest cases of mental disorders in Indonesia based on the results of the 2013 and 2018 Basic Health Research (Riskesdas) surveys. The purpose of this study was to determine the epidemiological description of mental disorders per classification in inpatients at Mental Hospitals in Special Region of Yogyakarta in 2019-2021.

Subjects and Method: This study used a quantitative descriptive method, sourced from secondary data from Mental Hospitals in Special Region of Yogyakarta for the period 2019 - 2021. The population in this study was 4,413, with a total sample of 3,919. The inclusion criteria are data of inpatients with mental disorders recorded in the recapitulation of medical records of inpatients at the Mental Hospital for the period 2019 to 2021. Exclusion criteria are incomplete data. The sampling technique used is total sampling. The person variable consists of classification of mental disorders, age, gender, education level, occupation, marital status, health insurance, and end of care. The instrument used in this research is a dummy table. Data from this study were analyzed descriptively by looking at the frequency and proportion of each variable studied.

Results: The results showed that the highest disease classification was F20-F29 (schizophrenia, schizotypal disorder, and delusional disorder) 76.72%. Most of them were aged 25-44 years (55.60%), male (61.55%), graduated from high school or equivalent (46.54%), did not work (66.90%), and were not married (57.29%). Most of them use national health insurance (62.95%), end of treatment with doctor's approval (97.86%), and length of stay ≤ 42 days (95.1%). Most of the patients came from Sleman Regency (37.25%) and from urban areas (71.37%).

Conclusion: Most patients with mental disorders are in productive age. People with mental disorders are an economic burden that must be borne by their families and the government. So there is a need for comprehensive prevention efforts to reduce the incidence of mental disorders in the community.

Keywords: mental disorders; epidemiological studies; schizophrenia

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Cite this as:
Rokhmayanti R, Rulianawati V, Astuti FD, Hastuti SKW, Rosyidah, Desvita WR (2023). Epidemiological Analysis of Mental Health Disorders in Patients at Psychiatric Hospitals in the Special Region of Yogyakarta, Indonesia. Indones J Med. 08(02): 204-218. https://doi.org/10.26911/theijmed.2023.08.02.10.

BACKGROUND

Health is a healthy condition physically, mentally, spiritually and socially which enables everyone to live productively socially and economically. This understanding can be interpreted that mental and physical health influence each other (Ministry of Health RI, 2009). Mental disorder is a condition in which all mental functions decrease which results in behavioral deviations due to distortions that result in irregularities in behavior (Nasir and Muhith, 2011).

The COVID-19 pandemic that has occurred since 2019 has had an impact and has had a major impact on the mental health of people in the world and in Indonesia. During the COVID-19 pandemic there was an increase in cases of mental disorders in the world, ranging from depression and anxiety. It is known that more than 60% of people experience symptoms of depression, more than 40% are accompanied by suicidal ideation, more than 60% experience symptoms of anxiety and more than 70% with post-traumatic stress disorder. It is estimated that around 32.6%-45% of the population affected by COVID-19 experience depressive disorders, while 10.5% - 26.8% of survivors of COVID-19 experience depressive disorders (RI Ministry of Health, 2021).

The World Health Organization (WHO) estimates that one in eight people in the world live with a mental disorder (WHO, 2022a). Based on the results of Basic Health Research (RISKESDAS) there has been an increase in cases of severe mental disorders and Mental Emotional Disorders (GME) in people aged >15 years that occurred from 2013 to 2018. The results of the 2013 Riskesdas survey (Ministry of Health RI, 2013) show that Special Region of Yogyakarta ranks first with the largest prevalence of severe mental disorders in Indonesia, namely 2.7% and Special Region of Yogyakarta is in second place with the highest prevalence of emotional mental disorders in people aged > 15 years, which is 8.0%. The results of the 2018 Riskesdas survey (Ministry of Health RI, 2018c) show that D.I. Yogyakarta occupies the second position in Indonesia, which is equal to 10.4% with the prevalence of households with household members with severe mental disorders. There is an increase in cases of mental disorders in Special Region of Yogyakarta in 2019 there were 4,546 cases to 9,227 cases in 2020 (DIY Health Office, 2021).

Mental disorders are a cause of disability by 13.4% higher than other diseases (Ministry of Health, 2017). This disability has an impact on the economy, namely causing a loss of 20 trillion rupiah (B2P3KS, 2020). This economic loss can be caused because people with mental disorders will experience a decrease in their ability to work and socialize (Notosoedirdjo and Latipun, 2016). The problem of mental disorders that have an impact on the economy is a serious problem that also needs to be taken seriously so that services for people with them and programs in the community can be better.

The Mental Hospital in DIY is the Main Hospital as a reference for mental disorders in Special Region of Yogyakarta and is the largest psychiatric hospital in Special Region of Yogyakarta, which is type A. This hospital accepts referrals for non-mental patients for outpatient care and for inpatient care which is specifically for mental patients. Cases of mental disorders recorded at the Mental Hospital in D.I. Yogyakarta in 2020 there were 4,545 cases and there will be 4,614 cases in 2021.

In the implementation of patient treatment services at the Mental Hospital in Yogyakarta, patient data is recorded in the patient's medical record. The patient's me-

dical record is a file that contains complete patient information (Ministry of Health RI, 2008b). Information obtained from patient medical records that can be described epidemiologically such as frequency, distribution, and determinants will be complex information. The size of the distribution is useful for knowing the pattern of the spread of the disease. Meanwhile, the frequency measure is used to assess the level of occurrence which indicates the magnitude of the health problem (Ministry of Health RI, 2016b).

The purpose of this study was to determine the epidemiological description of mental disorders per classification in inpatients at Mental Hospitals in Special Region of Yogyakarta in 2019-2021.

SUBJECTS AND METHOD

1. Study Design

This research is a research with quantitative methods using a descriptive approach. The data used in this study are secondary data of mental patients recorded in the medical records of the Mental Hospital in Special Region of Yogyakarta in the period 2019-2021.

2. Population and Sample

This research was conducted at a mental hospital in DIY. The population in this study are all patients who are hospitalized in mental hospitals in DIY for 2019-2021 with a total population of 4,413. The sampling technique used is using total sampling. the number of samples in this study were 3,919 samples.

3. Study Variables

The variables in this study are the distribution of mental patients based on person (classification of mental disorders, age, gender, education level, occupation, marital status, health insurance, end of treatment and patient status); place variable (patient's origin); and time variables (length of stay and trend of mental disorders).

4. Operational definition of variables

Age, namely the age of patients with mental disorders who are hospitalized at the Grhasia Mental Hospital in 2019 – 2021 and are recorded in the patient's medical record.

Gender, namely the gender of the patient with mental disorders who are hospitalized at the Mental Hospital in Yogyakarta for 2019 – 2021 and recorded in the patient's medical record.

Education level, namely the last level of education taken by patients with mental disorders who are hospitalized in Mental Hospitals in DIY in 2019-2021 and recorded in the patient's medical record.

Occupation, namely the type of work of mental patients who are inpatients at the Mental Hospital in Special Region of Yogyakarta for 2019-2021 and are recorded in the patient's medical record.

Marital status, namely the marital status of mental patients who are hospitalized at the Mental Hospital in Yogyakarta for 2019 – 2021 and recorded in the patient's medical record.

Health insurance is a type of health insurance that is used by mentally ill patients who are hospitalized in a mental hospital in Special Region of Yogyakarta for 2019 – 2021 and is recorded in the patient's medical record.

End of treatment, namely the end of treatment for mental patients who are hospitalized at the Mental Hospital in Yogyakarta for 2019-2021 and are recorded in the patient's medical record.

The place variable consists of the district-/city of origin of the patient and classification based on urban and rural areas. The patient's origin, namely the patient's place of residence, is divided into two rural and urban areas. Urban rural categorization according to BPS 2010.

Time variables consist of length of stay and trend of events.

Length of stay, i.e. the number of days of hospitalization for mental patients who are hospitalized at the Mental Hospital in Yogyakarta for 2019 – 2021 and recorded in the patient's medical record.

5. Study Instruments

The instrument used in this study was a dummy table questionnaire for data collection in accordance with the research objectives.

6. Data analysis

Data from this study were analyzed descriptively by looking at the frequency and proportion of each variable studied. The data is presented in the form of graphs and tables.

7. Research Ethics

This study uses secondary data. Anonymity, and confidentiality of data are applied in this research. This research has been approved by the Hospital Ethics Committee with Ethical Eligibility Number: No.063/EC-KEP-KRSJG/VIII/2022.

RESULTS

1. Univariate Analysis

Data on people with mental disorders treated at the RSJ in D.I. Yogyakarta from 2019 – 2021 showed that people with mental disorders who were treated in 2019 and 2020 were almost the same, but there was a decrease during the Covid 19 pandemic in 2021. The results can be seen in Figure 1.

Based on table 1, the characteristics of patients with mental disorders from 2019 to 2021, the most classification of mental disorders is classification F20–F29 (schizophrenia, schizotypal disorder, and delusional disorder) of 3,305 (76.72%), The second highest is F30-F39 (mood disorder) of 478 (11.10%). From 2019 to 2021, most of the ages of inpatients in the 25-44 years old group experienced 2,179 (55.60%). Based on the gender of the patients, the majority were male, 2,412 (61.55%). The most common sufferers of mental disorders were patients with a high school education level equivalent, 1,824 (46.54%) and 2,622 (66.90%) did not work. Based on the marital status of inpatients at the Mental Hospital in DIY from 2019 to 2021, the most experienced unmarried patients were 2,245 (57.29%), with JKN 3 PBI patients 2,467 (62.95%), most of the patient care has been allowed to go home on doctor's approval of 3,835 (97.86%) with length of stay ≤ 42 days of 3,727 (95.10%). Most of the inpatients in psychiatric hospitals in DIY were from Sleman Regency, 1,460 (37.25%) and 2,797 (71.37%) from urban areas.

DISCUSSION

Classification of mental disorders

Mental disorder is a disease experienced by a person which can have a negative impact on the life of the patient and family. Mental disorders can affect the emotions, thoughts, and behavior of patients beyond the cultural beliefs and personality of the patient (RI Ministry of Health, 2018a). Mental disorders consist of several different classifications. Based on the research results, the highest classification is classification F20–F29 (schizophrenia, schizotypal disorder, and delusional disorder). The results of this study are in line with research conducted by Katz et al (Katz et al., 2011) inpatients at Kraf Shaul Hospital were dominated by psychosis and schizophrenia disorders. This is because this group is a group in which one of the causal factors is genetics (Mundakir, 2019). Genetic factors are the cause of the development of schizophrenia with 80% hereditary causes of schizophrenia. If one parent suffers from the condition, there is a 13% chance that it will be passed on to their offspring. If present in both parents, the risk is >20% (Janoutoa et al., 2016).

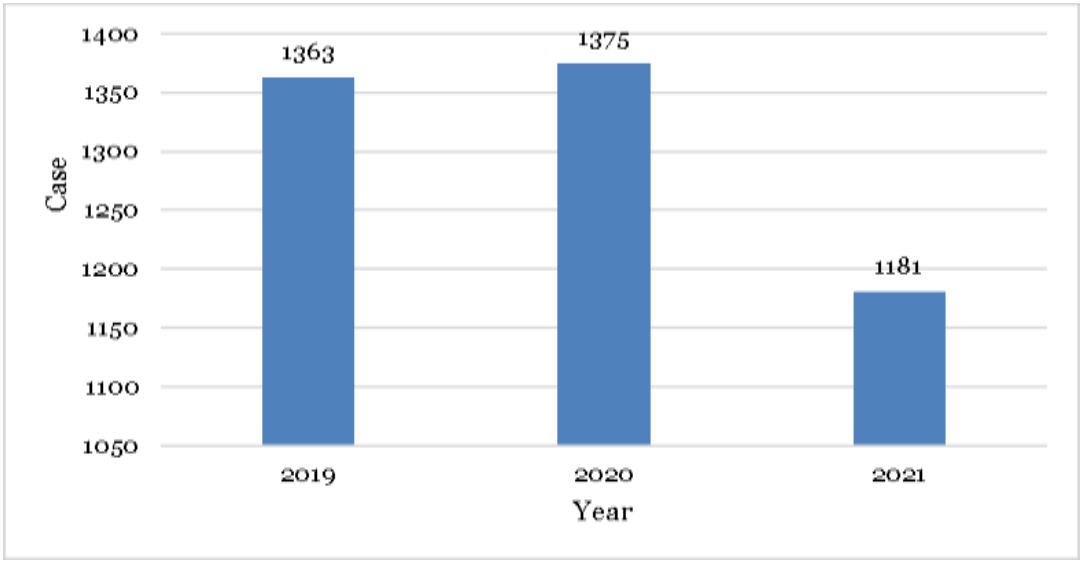

Figure 1. Graph of the number of patients with mental disorders in psychiatrics hospotals in Yogyakarta year 2019 – 2021

Classification of patients with mental disorders based on PPDGJ III mental disorders is classified as follows:
F00–F09 Organic mental disorder including symptomatic
F10–F19 Mental and behavioral disorders due to use of psychoactive substances
F20–F29 Schizophrenia, schizotypal disorder and delusional disorder
F30–F39 Mood disorders (affective)
F40–F48 Neurotic, stress related and somatoform disorders
F50–F59 Behavioral syndromes related to physiological disorders and physical factors
F60–F69 Adult personality and behavior disorders
F70–F79 Mental retardation
F80–F89 Disorders of psychological development
F90–F98 Behavioral and emotional disorders usually present in childhood and adolescence
F99 Mental disorder, unspecified.

Table 1. Characteristics of People with Mental Disorders in 2019 – 2021

Characteristics	n	%
Classification of mental disorders		
F00-F09	233	5.41
F10-F19	131	3.04
F20-F29	3,305	76.72
F30-F39	478	11.10
F40-F48	6	0.14
F60-F69	2	0.005
F70-F79	152	3.53
F90-F98	1	0.02
Age (Year)		
5 – 14	1	0.03
15 – 24	475	12.12

Characteristics	n	%
25 – 44	2,179	55.60
45 – 64	1,144	29.19
>65	120	3.06
Gender		
Male	2,412	61.55
Female	1,507	38.45
Education		
No formal education	173	4.41
Primary School	769	19.62
Junior High School	844	21.54
Senior High School	1,824	46.54
College	309	7.88
Occupation		
Not working	2,622	66.90
Employee	349	8.91
Private employee	274	6.99
Entrepreneur	248	6.33
Farmer	184	4.70
Student	143	3.65
Civil Servant	39	1.00
Retired Employee	33	0.84
Police/Soldier	17	0.43
Teacher/Lecturer	10	0.26
Marital Status		
Single	2,245	57.29
Married	1,347	34.37
Widow	166	4.24
Widower	161	4.11
Health insurance		
IPWL	67	1.71
Kemenkes	18	0.46
JAMKESDA	30	0.77
JAMKESOS	276	7.04
JKN 1	181	4.62
JKN 2	258	6.58
JKN 3 Mandiri	398	10.16
JKN 3 PBI	2,467	62.95
Umum 1	41	1.05
Umum 2	43	1.10
Umum 3	133	3.39
VIP	7	0.18

Characteristics	n	%
End of Treatment		
With Doctor's Approval	3,835	97.86
On Own Request	43	1.10
Die	19	0.48
Reunited	14	0.36
Dropping (Not Picked Up by Family)	6	0.15
Escape	2	0.05
Length of stay		
≤42 days	3,727	95.10
>42 days	192	4.90
Residence		
Bantul	938	23.93
Gunung Kidul	442	11.28
Yogyakarta	513	13.09
Kulon Progo	566	14.44
Sleman	1,460	37.25
Urban and Rural Areas		
Urban	2,797	71.37
Rural	1.122	28.63

Age characteristics

Based on the results of this study, the age group of 24-44 year olds with the classification F20-F29 (schizophrenia, schizotypal disorder, and delusional disorder) is the most likely to be inpatients at the Mental Hospital in DIY. This is in line with research conducted by Mulyani and Isnaini (Mulyani and Isnani, 2019) which showed that schizophrenic patients were dominated by the age group of 25-44 years. The high number of patients at productive age can be caused by the heavy pressure experienced, at a productive age a person is required to be able to produce something good for himself, his family, and the environment (Nisa, Fitriani and Ibrahim, 2014).

Judging from the peak onset of F20 – F29 (schizophrenia, schizotypal disorder and delusional disorder), the high number of cases at the age of 24 – 44 years corresponds to the peak onset of the disease. According to Sadock and Sadock (Sadock and Sadock, 2004) the peak age of onset of schizophrenia in men is 8-25 years and in women 25-35 years. This age is a productive age so that people with mental disorders at that age will become a burden to their families and the government.

Gender characteristics

Based on the results of this study, the sex of inpatients at the Mental Hospital in DIY in 2019 – 2021 was mostly male patients with classification F20 – F29. This is in line with research conducted by Erlina (Erlina, 2010) that the male sex is the most common sex with schizophrenia. In addition, in another study conducted by Witbooi et al (Mandala-Witbooi et al., 2019) schizophrenia was significantly associated with male gender. This is because women are better able to manage the emotional pressure of others while managing their own stress than men (Bodenmann et al., 2015). If a person is not able to manage stress properly, it will have an impact on physical disorders, unhealthy behavior or mental disorders (Maramis, 2009). Individuals with lower stress resis-

tance or lower stress tolerance will be more susceptible to mental disorders (Pasricha, 2019).

Men experience more environmental hostility than women (Falkenburg and Tracy, 2014). Men tend to show worse negative and depressive symptoms than women (Abel et al., 2010). In addition, another plausible explanation could be the fact that males tend to arrive late for treatment, with severe and aggressive symptoms that require hospitalization (Mandala-Witbooi et al., 2019). So these factors are the cause of high cases in men. However, according to Sadock, the prevalence between men and women is equal, the difference is that schizophrenia for the first symptom occurs earlier in men than in women. Men are more likely to experience more severe conditions due to negative symptoms than women and occur before the onset of the disease, women have better social functioning abilities than men (Sadock and Sadock, 2004).

Characteristics of educational level

Based on the results of this study, the most recent level of education in inpatients at the Yogyakarta Mental Hospital in 2019 – 2021 was most experienced by patients with the same level of high school education with classification F20 – F29. schizophrenia is experienced by many patients with the last education level of high school or equivalent. This is related to the onset of schizophrenia, which occurs most frequently in the late teens (WHO, 2022b). So that the education achieved by patients does not reach higher education if they have experienced onset at that age (Breslau et al., 2008). In addition, psychiatric illness often causes poor school performance, dropouts and unemployment. Low education, unemployment and mental illness are a vicious circle that mutually affect mental health (Utamidewi, 2017).

Job characteristics

Based on the results of this study, it was shown that most patients who did not work were found with the classification of mental disorders F20 – F29 (schizophrenia, schizotypal disorders, and delusional disorders). These results are in line with the research conducted by Erlina, Soewadi and Pramono (Erlina et al., 2010) where patients with schizophrenia were dominated by patients who did not work.

The results of a previous study conducted by Mandala-Witbooi et al (Mandala-Witbooi et al., 2019) stated that unemployment is closely related to schizophrenia. This can be due to severe disorders caused by severe psychotic disorders such as schizophrenia, resulting in an inability to compete in the labor market. Someone with schizophrenia experiences changes in performance in brain transmission, resulting in a person being reluctant to do good work or habits that are beneficial to his life in the future (Sigde, 2021). According to Sadock and Sadock (Sadock and Sadock, 2004) an estimated 75% of people with schizophrenia are unable to work.

According to Wahyudi and Fibriana (Wahyudi and Fibriana, 2016) people who do not work have a higher risk of developing schizophrenia compared to people who work. This is because not working can make people lose opportunities to show self-actualization, so that it can make people not carry out an activity. So, it is very possible for people to experience low self-esteem which will have an impact on mental disorders (Rinawati and Alimansur, 2016). The average person with mental disorders generally spends more time over the next 4 years unemployed than those with better mental health (Butterworth et al., 2012).

According to data from the Central Statistics Agency (BPS) (BPS, 2022) in Indonesia the highest unemployment rate occurs

among people with an equivalent high school education level. Based on the results of research conducted by Sauidah and Cahyono (Suaidah and Cahyono, 2013) the level of high school education affects a person's unemployment. The second possibility is strengthened by the results of this study which showed that patients who did not work were dominated by patients with the last education level of senior high school or equivalent. So, it is necessary to have a program in an effort to deal with mental disorders in high school graduates who do not get jobs so that the waiting period for getting a job does not experience stress.

Characteristics of marital status

Based on the results of this study, the marital status of inpatients at the Mental Hospital in DIY in 2019 – 2021 is mostly experienced by unmarried patients with classification F20 – F29 (schizophrenia, schizotypal disorder, and delusional disorder). These results are in line with research conducted by Erlina (Erlina, Soewadi and Pramono, 2010) who experienced schizophrenia in many unmarried people. Unmarried people have a 4.747 times higher risk of experiencing schizophrenia compared to married people (Wahyudi and Fibriana, 2016). This is because marriage is a manifestation of the ability to foster interpersonal relationships and illustrates that schizophrenic patients need social support in realizing a meaningful life. Marital status is considered necessary for ego exchange so that peace is achieved (Girsang, Tarigan and Pakpahan, 2020).

Previous research stated that people who are married have a higher life status so they are less likely to wish to commit suicide, compared to groups who are divorced/widowed/separated (Nyer et al., 2010). This may be because single and divorced individuals may not always easily seek romantic relationships, and exiting such relationship statuses from forming relationships at this age and middle age are generally more resistant because most people are already involved in romantic relationships (Grundström et al. , 2021).

The results of study by Ariyanti et al., 2020) explain that people with schizotypal disorder have a lack of social and interpersonal relationships caused by discomfort, reduced ability to establish close relationships with other people, cognitive distortions, and eccentric behavior and appearance. This is why many people with schizotypal disorder are not married or not married.

Characteristics of health insurance

Characteristics of health insurance Based on the results of this study, the health insurance used by inpatients at the Yogyakarta Mental Hospital in 2019 – 2021 each year is dominated by patients using JKN PBI health insurance with classification F20 – F29. These results are in line with previous studies of schizophrenic patients using JKN PBI more (Pratiwi et al., 2017). JKN PBI is a National Health Insurance whose overall contributions are paid by the government (Kemenkes RI, 2016a).

The high number of mental patients financed by the government will affect the economy. According to BPJS in 2020 in Indonesia, most claims for cases of mental disorders in inpatient services are dominated by a diagnosis of schizophrenia, followed by a diagnosis of bipolar disorder, organic disorders, followed by depression, and other neurosaic disorders besides depression. For schizophrenia the total costs incurred in 2020 amount to 282 billion (BPJS, 2022).

The existence of people with mental disorders has an impact on aspects of resilience in an area, both economically, security and socially. There is a decline in individual economic capacity which has an impact on weakening the economic capacity of families and regions. The regional economy will in-

crease if the family's ability is driven by good individual economic ability. So, if it is not handled properly this burden will continue to be borne and have an impact on others (Judge, 2021).

Characteristics of the end of treatment.

Based on the results of this study, the most common end of inpatient care at the Mental Hospital in Yogyakarta in 2019 – 2021 was experienced by patients with the end of treatment at discharge with doctor's approval (APS) with classification F20 – F29 (schizophrenia, schizotypal disorder, and delusional disorder) of 74.98%. According to the Indonesian Ministry of Health (RI Ministry of Health, 2017a) patients are allowed to go home for treatment with the doctor's approval if the patient has been declared cured. Heal in the sense of being able to live independently and be able to achieve business or work independently (Widoanti and Meirinawati, 2020). According to Permenkes No. 54 of 2017 concerning tackling shackling for people with mental disorders, the criteria for people with mental disorders (ODGJ) can live independently at home/community. This can be done by ODGJ who have good functioning, have the ability to build relationships, and be involved in activities outside the home, if they have small children, the growth and development needs of children can be met, and can interact well with family members (Ministry of Health RI, 2017b). This shows that the majority of patients classified F20 – F29 go home according to these criteria.

Based on the results of the study there was an increase in death cases every year. The increase in death cases is estimated due to the COVID-19 pandemic. This is because the 6 patients who died were patients who had COVID-19 status as Patients Under Monitoring (PDP), suspected, probable, and positive for COVID-19. Recent evidence proves that people diagnosed with schizophrenia, compared to the general population, show higher COVID-19-related deaths and an increased risk of contracting COVID-19 (Wang et al., 2021). The increased risk of COVID-19 and higher mortality can also be associated with an unhealthy lifestyle which is often observed in subjects living with schizophrenia (Barlati, Nibbio and Vita, 2021). Low awareness and concern about viruses and pandemics, may be related to substantially stable psychotic symptoms and stable subjective well-being (Pinkham et al., 2020).

Characteristics of length of stay

Based on this study, the results of length of stay in patients with mental disorders were dominated by patients with length of stay ≤ 42 days with classification F20 – F29 (schizophrenia, schizotypal disorder, and delusional disorder). This shows that the majority of inpatients are in accordance with the standards set out in the Minister of Health of the Republic of Indonesia No: 129/Menkes/SK II/2008 the length of stay in hospital in patients with mental disorders is ≤42 days (Ministry of Health RI, 2008a). The patient's length of stay is an indicator to determine the efficiency of hospital services (Adhani, 2018). Although patients are dominated by patients with standard length of stay, judging from the patient's status, many patients experience re-hospitalization, this is of course a serious concern.

Characteristics of origin of districts and regions

Based on the results of this study during 2019-2021 the results showed that the most patients came from D.I. Yogyakarta with classification F20-F29 (schizophrenia, schizotypal disorder, and delusional disorder). This result is in line with the results of a survey by the Indonesian Ministry of Health (Ministry of Health RI, 2013) which showed that Special Region Yogyakarta is the first

place for the most severe mental disorders in Indonesia. In addition, the results of a survey by the Indonesian Ministry of Health (Kemenkes RI, 2018c) show that Special Region Yogyakarta occupies the second highest position with households with severe mental disorders in Indonesia.

Based on districts in Special Region Yogyakarta, the results of this study showed that patients were dominated by patients from Sleman District F20 – F29 (schizophrenic disorders, schizotypal disorders, and delusional disorders). These results are in line with research conducted by Pratiwi (Pratiwi et al., 2017) where schizophrenia patients were more likely to come from Sleman Regency. In accordance with the results of a survey conducted by the Indonesian Ministry of Health (Kemenkes RI, 2018b) schizophrenia in Special Region Yogyakarta is most commonly found in Sleman Regency. The high number of cases in Sleman compared to other districts can be caused by the high population in the area. According to BPS Special Region Yogyakarta, (BPS DIY, 2022) Sleman Regency is the district with the highest population in Special Region Yogyakarta from 2015 to 2022. In addition, from 2017 to 2021 Sleman is a district with the highest number of unemployed residents in Special Region Yogyakarta (BPS DIY, 2022). Unemployed people have a 6.2 times higher risk of suffering from schizophrenia than working people (Zahnia and Wulan Sumekar, 2016). So, it can be assumed that the high unemployment rate in Sleman is one of the factors for the high cases of mental disorders in Sleman compared to other districts/cities in Special Region of Yogyakarta.

Based on the results of this study, most cases of mental disorders were found in urban areas. This is in line with research conducted by McGrath (McGrath et al., 2004) that mental patients are most often found in urban areas. Individuals born, living or raised in densely populated urban environments have a greater risk of developing schizophrenia than those in rural areas (Plana-Ripoll et al., 2021). This is because urban areas are densely populated areas, so they have high levels of poverty, risks of violence, and disease outbreaks that can cause stress (Kristiansson et al., 2015). It is suspected that the determinant factors or triggers for the high number of cases of mental disorders in urban areas are life-threatening events, violence, lack of social support, and stressful life in urban areas. In addition, urban density results in air pollution, air pollution in urban locations which can directly affect cognitive and brain development. Some air pollutants, such as lead, can cross the blood-brain barrier resulting in immune dysregulation and stress (Kristiansson et al., 2015). Previous studies explained that the cause of the high cases of mental disorders in patients who came from urban areas was because rural residents faced more difficulties in accessing formal psychiatric treatment due to limited care and mental hospitals located in urban centers (Yang et al., 2013)).

AUTHOR CONTRIBUTION

Rokhmayanti, Viandika Rulianawati and Fardhiasih Dwi Astuti the research concept and design, acquisition of data, and/or analysis and interpretation of data, drafting the article, SKW revising critically for important intellectual content. Rosyidah and Widea Rossi Desvita final proofreading and approval of the version for publication.

ACKNOWLEGDEMENT

We would like to thank the leadership and all staff of the Mental Hospital in DIY for giving permission to do this research. To Mr. Mugi Wahidin, S. KM., M.Epid., Mr. Indra

Dwinata, S.KM., M.PH. who have provided input in this study.

FINANCIAL AND SPONSORSHIP

This research has been funded by LPPM Ahmad Dahlan University with Research Contract Number: PD-235/SP3/LPPM-UA-D/VII/2022.

CONFLICT OF INTEREST

This study is self-funded.

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