

**Descriptive Study on Duration of Hospitalization and Categorical System of Patient with Mental Disorder Cared in Pelamonia Hospital Makassar**Basmalah Harun<sup>1</sup><sup>1</sup>D-3 Nursing Study Program, Sekolah Tinggi Ilmu Kesehatan Makassar**Abstract**

Patient with mental disorder is more and more increasing. Pelamonia Hospital Makassar, give care to patient with mental disorder with its mission and vision on service quality related to duration of hospitalization. Pelamonia Hospital Makassar as educational type Pelamonia Hospital Makassar has mission of developing and transferring knowledge either within hospital, to other hospitals or to educational institution; for example, categorical system of patient with mental disorder made by Intansari Nurjannah is tried to be widely developed and applied. Identify average duration of hospitalization and average conditions in categorical system of patient with mental disorder (health promotion, maintenance, acute and crisis). It is quantitative descriptive study with cross sectional approach using documentation method. Sample consist of 40 respondents of patient with mental disorder cared in Pelamonia Hospital Makassar with inclusion criteria of male and female, child and adult patient that entering or going home that is cared during study period. Instrument used is application of categorical system of mental disorder patient in clinic "Patient's General Condition Report". Result of quantitative calculation indicated that average hospitalization is 27.925 shift of 9.3 days or 9 day 7 hours 12 minutes. Average condition for each categorical system of mental disorder patient is category of health improvement = 1.8 shift or 0.6 day or 14.4 hour or 14 hour 24 minutes; care category = 5.575 shift, 1.85 day or 1 day 20 hour 24 minutes; acute category = 11.75 shift or 3.9 day or 3-day 21 hour 36 minutes; crisis category = 5.6 shift or 2.87 day or 2 days 20 hours.

**Keywords:** Average Duration of Hospitalization, Categorical System of Patient with Mental Disorder, Inpatient Unit, Patient with Mental Disorder

**Introduction**

Humans are complex creatures because humans are somatopsychosocial and spiritual creatures (Soewadi, 2002), where these three factors will interact holistically, and each factor will influence each other. Under normal circumstances, these three factors are in balance/homeostasis, but in abnormal circumstances, some of these factors are disturbed, so to determine mental disorders these three elements must be taken into account (Romadhon, 2015). Mental disorders mean that what stands out are the pathological symptoms of the psycho element, but this does not mean that the other elements are not disturbed, because the person who is sick and suffering is the whole person and not just their body, soul or behavior but also somatopsychosocial factors. and it is his spirituality that experiences disturbances (Maramis, 1997).

Based on data in the medical records sub-section of Ghrasia Hospital (Yunus & Ruliyandri, 2020), at Grazia Hospital the number of patients increases every year. Pelamonia Hospital Makassar is one of the public hospitals that provides psychiatric care facilities, where Nurses are required to be able to provide optimal mental nursing care. The implementation of nursing care starts from assessment to evaluation so that patient progress can be monitored. (Dep.kes, 2000)

Pelamonia Hospital Makassar is a Type B educational hospital belonging to the Makassar government level II (Subiyantar et al, 2013) which provides various health services to the community including inpatient care with a bed capacity of 283. One of the inpatient service rooms is the Pelamonia Hospital Makassar. The Pelamonia Hospital Makassar is a treatment room for patients with mental disorders serving male and female patients, adults and children. This room consists of 3 VIP rooms, 4 class 1 rooms, 7 class 2 rooms and 6 class 3 rooms. The bed capacity is 60 beds. The Pelamonia Hospital Makassar is led by a room head assisted by a deputy room head who supervises 15 staff with details of 7 nurses and 8 non-nursing staff. All nursing staff have a D-III Nursing background.

Makassar Regional Hospital is a type B educational hospital which in its existence partners and collaborates with educational institutions in the surrounding environment including Pelamonia Hospital Makassar (Riyanti, et al, 2020). UGM Yogyakarta, especially for the mental nursing (psychiatry) department, is currently working on widespread use of the mental patient category system both in mental hospitals and regional hospitals that have psychiatric rooms and other educational institutions (Mastiyas, 2018).

The category of mental disorder patients is a development and refinement of the classification of mental disorder patients (Stuart and Sundeen, 1995). Thus, it is hoped that the Makassar hospital as a type B educational hospital can go hand in hand with UGM Yogyakarta as an educational institution (Wasniyati, et al, 2014), including the use of a mental patient category system in the Pelamonia Hospital Makassar as an inpatient room for mental patients.

One of the qualities of a hospital is determined by the output seen from the efficiency of the treatment room, one of which is the average length of stay (ALOS), the shorter the length of stay, the better the quality of the hospital. The shorter the hospitalization time, the lower the costs incurred by the patient and his family (Ministry of Health, 2000). By looking at the conditions above, public interest in seeking treatment at Makassar hospitals is increasingly high.

According to Stuart and Sundeen (1995), in the United States in particular in recent years the focus of psychiatric care has shifted from extended care to the patient's most prominent condition towards shorter hospital stays and greater choice among settings. treatment options, for example in 1987 the average length of stay for people with acute mental disorders was around 25 days. When compared to 1991, which was only 19 days (Stuart and Sundeen 1995).

Certain hospitals for people with mental disorders have an average length of stay of between 7-10 days, and stability programs for patients in critical situations can only require a stay of 2-3 days (Stuart Sundeen, 1995). Currently, the categorization of mental disorder patients based on crisis, acute, maintenance and health promotion phases, which is a development of the classification according to Stuart and Sundeen (1995), has not been applied in a comprehensive manner at Makassar District Hospital, including the results of research that produces how long the patient's condition is at each stage of treatment. in the mental patient category system (crisis, acute, health maintenance and improvement). Looking at the data above, the author is interested in conducting research with the title "Descriptive Study of Length of Hospitalization and Mental Patient Category System for Patients Treated in the Pelamonia Hospital Makassar at Makassar Regional Hospital".

## Methods

The type of research used is descriptive with a cross-sectional research design using documentation methods. This research was carried out in the Pelamonia Hospital Makassar at the Makassar Regional General Hospital. The population in this study were all mental patients treated in the Pelamonia Hospital Makassar at Makassar Regional Hospital. The sample in this study consisted of 40 respondents from mental patients who were treated in the Pelamonia Hospital Makassar at Makassar District Hospital on 25 December 2004 – 10 January 2005. The variables in this study were a single variable, namely, length of stay and the mental patient category system for patients treated in the Pelamonia Hospital Makassar. Makassar Regional Hospital.

## Results and Discussion

From the observation results, there were 40 respondents who met the criteria as samples and the number of hospitalizations for all respondents was 1117 shifts, so the average length of stay in the cherry blossom room at Makassar Regional Hospital was 27,925 shifts. So the average length of stay is 9.30 days or 9 days 7 hours 12 minutes. The duration of the condition for each mental patient category system, namely for crisis, was found that the total shift for 40 respondents was 344 shifts so that the average time for the crisis condition was 2.87 days or 2 days 20 hours 48 minutes. In acute, the total number of shifts for 40 respondents was 478 shifts, so the average time for acute conditions was 11.75 shifts or 3.9 days or 3 days 21 hours 36 minutes. It was found that the total shift for 40 respondents was 223 shifts, so the average time for acute conditions was 5,575 shifts or 1.85 days or 1 day 20 hours 24 minutes. The improvement in health obtained in all shifts for 40 respondents was 72 shifts so that the average time for health improvement was 1.8 shifts or 0.6 days or 14 hours 24 minutes.

### Percentage of Length of Stay in Hospital

Table 1. Percentage of Length of Stay in Hospital Conclusion

No.	Length of Hospitalization (Shift)	Respondent	
		Total	Percentage
1	11	1	2,5
2	13	1	2,5
3	16	2	5
4	21	1	2,5
5	22	2	5
6	23	2	5
7	24	2	5
8	25	4	10
9	26	3	7,5
10	28	4	10
11	29	1	2,5
12	30	3	7,5
13	31	2	5
14	33	1	2,5
15	34	3	7,5

16	35	2	5
17	36	2	5
18	37	2	5
19	40	2	5
Total		40	100 %

Source: Primary data

Based on table 1, it was found that the number of respondents with a length of stay of 11-22 shifts was 7 respondents, 23-28 shifts 7 respondents, 23-28 shifts 15 respondents, 29-34 shifts 10 respondents, 35-40 shifts 8 respondents.

### Percentage of Old Conditions in the Health Improvement Category (Category I)

Table 2. Percentage of old conditions in the health improvement category

No.	Condition Length of Health Improvement Category (Shift)	Respondent	
		Total	Percentage
1	0	19	47,5 %
2	1	2	5 %
3	2	4	10 %
4	3	7	17,5 %
5	4	3	7,5 %
6	5	2	5 %
7	6	2	5 %
8	7	1	2,5 %
Total		40	100 %

Source: Primary data

Based on table 2, the number of respondents with health improvement conditions is 0-2 shifts 25 respondents, 3-5 shifts 12 respondents, 6-7 shifts 3 respondents.

### Percentage of Maintenance Category Conditions

Table 3. Percentage of Maintenance Category Conditions

No.	Percentage of Length of Time in Maintenance Category (Shift)	Respondent	
		Total	Percentage
1	0	1	2,5 %
2	1	3	7,5 %
3	2	1	2,5 %
4	3	5	12,5 %
5	4	3	7,5 %
6	5	5	12,5 %
7	6	7	17,5 %
8	7	7	17,5 %
9	8	4	10 %
10	10	2	5 %
11	11	1	2,5 %
12	12	1	2,5 %
Total		40	100 %

Source: Primary data

Based on table 3, it was found that the number of respondents with a length of time in the maintenance category of 0-2 shifts was 6 respondents, 3-6 shifts were 11 respondents, 7-9 shifts were 10 respondents, 10-12 shifts were 16 respondents and 13-16 shifts were 3 respondents.

### Percentage of Duration of Acute Category Conditions

Table 4. Percentage of Duration of Acute Category Conditions

No.	Duration of Condition in Acute Category (Shift)	Respondent	
		Total	Percentage
1	5	1	2,5 %
2	6	2	5 %
3	7	2	5 %
4	8	1	2,5 %
5	9	2	5 %
6	10	9	22,5 %
7	11	1	2,5 %
8	12	6	15 %
9	13	1	2,5 %
10	14	6	15 %
11	15	3	7,5 %
12	16	2	5 %
13	17	1	2,5 %
14	18	1	2,5 %
15	19	1	2,5 %
16	20	1	2,5 %
Total		40	100 %

Source: Primary data

Based on table 4, it was found that the number of respondents with a duration of acute condition category of 5-7 shifts was 5 respondents, 8-10 shifts were 12 respondents, 11-13 shifts were 8 respondents, 14-16 shifts were 11 respondents and 17-20 shifts were 11 respondents. 4 respondents.

### Percentage of Old Crisis Category Conditions

Table 5. Percentage of Duration of Crisis Category Conditions

No.	Length of Crisis Category Condition (Shift)	Responden	
		Total	Percentage
1	3	3	7,5 %
2	5	3	7,5 %
3	6	5	12,5 %
4	7	4	10 %
5	8	2	5 %
6	9	4	10 %
7	10	11	27,5 %

8	11	4	10 %
9	12	1	2,5 %
10	13	1	2,5 %
11	15	1	2,5 %
12	16	1	2,5 %
Total		40	100 %

Source: Primary data

Based on table 5, the number of respondents with a duration of crisis category 3-6 shifts 9 respondents, 7-9 shifts 10 respondents, 10-12 shifts 16 respondents and 13-16 shifts 3 respondents.

### Percentage of Length of Condition for Each Mental Patient Category System

Table 6. Percentage of Duration of Condition for Each Mental Patient Category System

No.	Category System Mental Patients	Total (Shift)	Percentage
1	Improved health	72 shifts	6,4 %
2	Maintenance	223 shifts	19,9 %
3	Acute	478 shifts	42,79 %
4	Crisis	344 shifts	30,79 %
Total		1117 shift	100 %

Source: Primary data

Based on table 6, the condition of the health improvement category was 72 shifts with the smallest percentage, namely 6.4%, maintenance 223 shifts with 19.9%, acute 478 shifts with 42.79% and crisis 344 shifts with 30.79%.

### Length of Condition for Each Mental Patient Category System

Table 7. The Duration of the Condition of Each Mental Patient Category System

No.	Category System Mental Patients	Number of Conditions		
		Shift	Average (shifts)	Average in days
1	Improved health	72	1,8	0,60 Days
2	Maintenance	223	5,575	1,85 Days
3	Acute	478	11,95	3,98 Days
4	Crisis	344	8,6	2,86 Days
Total		1117	27,925	9,30 Days

Source: Primary data

Based on table 7, the duration of the condition for each patient category system for improving health 72 shifts is an average of 1.8 shifts and 0.6 per day. Maintenance category 223 shifts, average 5,575 shifts and 1.85 in days. Acute category 478 shifts, average 11.95 shifts and 3.98 in days. Crisis category 344 shifts, average 8.6 shifts and 2.86 in days (2 days 20 hours 38 minutes 4 seconds).

## Treatment Class Percentage Table

Table 8. Treatment Class Percentage

No.	Class Treatment	Respondent	
		Total	Percentage
1	VIP	6	15%
2	1	7	17,50%
3	2	14	35%
4	3	13	32,50%
Total		40	100%

Source: Data primer

Based on table 8, the number of respondents for each class was VIP class 6 respondents (15 respondents), class 1 got 7 respondents (17.5%), class 2 got 14 respondents (35%) and class 3 got 13 respondents (32.50%).

From the results of observations of 40 respondents who met the criteria as a sample, the total length of stay was 1117 shifts so that the average length of stay in the Pelamonia Hospital Makassar at Makassar Regional Hospital was 27,925 shifts or 9.30 days or 9 days 7 hours 12 minutes. Compared to previous months, namely August, September and October, it was 13,12,11 and an average of 12 days.

Alos decreased due to differences in family support between one respondent and another, which was caused by differences in treatment class. VIP classes, classes 1 and 2 have a shorter length of treatment compared to class 3 because these classes are awaited by families who really provide support and attention to the respondents. While class 3 does not allow the respondent's family to accompany the respondent completely. Most of the respondents were taken from VIP class, class 1 and 2, namely 27 respondents (67.5%) and the other 13 respondents 2.5% from class 3. Glen Babbard in Sadock Sadock, 1997. Indicates comparative short and extended hospitalization due to by . 1. disease severity factors 2. treatment factors and 3. environmental factors. It was stated that environmental factors were family support, the post-nurse support system in the hospital and the presence of clear stressors. So the data obtained supports the theory above.

Alos 9.30 days shows that the quality of the hospital is getting better. One of the qualities of a hospital is determined by the output seen from the efficiency of the treatment room, one of which is the average length of stay or Alos. The shorter the hospitalization time, the better the quality of the hospital (Ministry of Health, 2000). Alos 9.30 days shows that the Makassar Regional Hospital meets the Alos RSU standard, namely 7-10 days, especially for the Pelamonia Hospital Makassar treatment room which serves nursing patients with mental disorders. Looking at the results above, the Pelamonia Hospital Makassar is expected to be able to prepare a better inpatient treatment class. If necessary, class 3 can be refined/changed to become a class equivalent to VIP class, class 1 and class 2.

The short research time resulted in only a small proportion of patients in class 3 who had long Alos becoming respondents. It is hoped that the next research will take a long period of at least 3 consecutive months to better monitor developments and get better results.

Category 3 (Acute) patients amounted to 478 shifts with an average of 11.95 shifts or 3.98, which is the average patient condition for the longest time in this study. This is in

accordance with the theory that to relieve the patient's disease condition requires a long and consistent period of time. The time of 3.98 days is much better compared to research abroad, namely in the United States, where the conditions that existed when the patient was in acute condition reached 25 days in 1987 and 19 days in 1991. (Stuar and Sundeen, 1995).

Category IV (crisis) patients had 344 shifts with an average of 8.6 shifts or 2.86 days, which was the second longest average condition. Patients who fell into category IV were mostly due to the idea of being forced to go home as many as 32 out of 40 respondents. Most of the patients were in VIP classes, 1 and 2. The condition of the room was open and the gate was never closed, making it possible for patients to escape. The large number of patients in category IV requires nurses to work more intensively to provide care and monitoring, the number of available nursing staff is very limited so assistance and collaboration with families is very necessary to support patient care.

The research results mean that the average category IV condition is 6.6 shifts or 2.86 days, which is in line with the results of previous studies both at home and abroad. In the United States, in certain hospitals, people with mental disorders have an average length of stay of between 7-10 days, and the stability program for the emergency (crisis) period for sufferers only requires a stay of 2-3 days (Stuart Sundeen, 1995). The average length of the crisis category treatment stage for clients with mental disorders at IRNA IV Dr. Hospital. Sardjita Yogyakarta is 6.43 shifts. (Daruwati, 2004).

Category 2 patients (maintenance) amounted to 223 shifts, an average of 5,575 shifts or 1.85 days or 1 day 20 hours 29 minutes. This is the second shortest or third longest condition on average, because the patient's family immediately asked to go home before entering the next condition. The patient's family assumes that the patient has recovered.

Category 1 patients (health improvement) amounted to 72 shifts with an average of 1.8 shifts or 0.6 days, which is the shortest average condition, because patients who are not yet in this category have gone home so the calculation of days of care will be shorter. This condition is supported by data that 47.5% of respondents in this category were not passed, in other words they had gone home.

In table 1. The percentage of length of stay in hospital can be explained by the fact that the average treatment for each patient varies from the lowest 11 shifts to the highest 40 shifts. The highest average length of stay was 28 days, namely 4 respondents (10%).

In table 2. The percentage of duration of conditions in the health improvement category (category 1), shows that the duration of conditions in category I varies and 0 shifts (47.5%) were 19 respondents, which means the patient did not experience treatment for category I conditions in the hospital for up to 7 shifts as many as 1 respondent (2, 5%). This is very normal because the patient feels good and the family wants it.

In table 3. The percentage of length of time in the maintenance category (category II), shows the length of time in the maintenance category from 0 days to 12 days. The highest number of respondents, namely 7 people (17.5%) experienced conditions in the maintenance category for 6 shifts.

In table 4. The percentage of duration of conditions in the acute category (category II), shows that the duration of conditions in the acute category varies from 5 shifts - 20 shifts. The duration of the acute category condition was 10 shifts experienced by 9 respondents, 22.5 shifts.

Table 5. The percentage of duration of conditions in the acute category (category IV), shows that the duration of conditions in the crisis category varies from 3 shifts to 16 shifts. The duration of the 10 shift crisis category was experienced by 11 respondents or 27.5%.

Table 6. The percentage of the duration of the condition of each mental patient category system which is explained that the duration of the health improvement condition is the smallest, namely 6.4%, maintenance is the 2nd smallest with 19.9%, the crisis is the 2nd largest with 30.79% and the The largest percentage is in the acute category with 42.79%.

Table 7. The duration of the condition of each mental patient category system is an explanation of table 4-9 which confirms the calculation of the average condition of each mental patient category system in days, namely that:

The average health condition improved by 0.6 days. The average maintenance condition is 1.85 days. The average acute condition is 3.98 days. The average crisis condition is 2.86 days.

Based on table 8. The percentage of treatment classes obtained by respondents for each class was obtained by VIP class 6 respondents (15%), class 1 obtained 7 respondents (17.5%), class 2 obtained 14 respondents (35%) and class 3 obtained 12 respondents.

## Conclusion

The results of research on descriptive studies of length of stay and mental patient category system for patients treated in the Pelamonia Hospital Makassar at Makassar Regional Hospital can be concluded: (1) Average length of stay for patients treated at the Pelamonia Hospital Makassar at Makassar Regional Hospital on 25 December 2004 - 10 January 2005 was 27,925 shifts or 9.3 days. (2) The average time for a patient's condition at each stage of treatment in the mental patient category system (crisis, acute, health maintenance and improvement) on December 25 2004 – January 10 2005 is: Category I (health improvement) 1.8 shifts or 0.6 days or 14.4 hours or 14 hours 24 minutes. Category II (maintenance) 5,575 shifts or 1.85 days or 1 day 20 hours 24 minutes. Category III (acute) 11.75 shifts or 3.9 days or 3 days 21 hours 36 minutes. Category IV (crisis) 8.6 shifts or 2.87 days or 2 days 20 hours.

## References

- Akkaş, M. A., Sokullu, R., & Cetin, H. E. (2020). Healthcare and patient monitoring using IoT. *Internet of Things, 11*, 100173. <https://doi.org/10.1016/j.iot.2020.100173>
- Alimoradi, Z., Lin, C. Y., Broström, A., Bülow, P. H., Bajalan, Z., Griffiths, M. D., ... & Pakpour, A. H. (2019). Internet addiction and sleep problems: A systematic review and meta-analysis. *Sleep medicine reviews, 47*, 51-61. <https://doi.org/10.1016/j.smrv.2019.06.004>
- Černja, I., Vejmelka, L., & Rajter, M. (2019). Internet addiction test: Croatian preliminary study. *BMC psychiatry, 19*(1), 1-11. <https://doi.org/10.1186/s12888-019-2366-2>
- Chao, C. M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in psychology, 10*, 1652. <https://doi.org/10.3389/fpsyg.2019.01652>
- Fahlevi, M., Saparudin, M., Maemunah, S., Irma, D., & Ekhsan, M. (2019). Cybercrime Business Digital in Indonesia. In *E3S Web of Conferences* (Vol. 125, p. 21001). EDP Sciences. <https://doi.org/10.1051/e3sconf/201912521001>

- Fisoun, V., Floros, G., Siomos, K., Geroukalis, D., & Navridis, K. (2012). Internet addiction as an important predictor in early detection of adolescent drug use experience—implications for research and practice. *Journal of Addiction Medicine*, 6(1), 77-84. <https://doi.org/10.1097/ADM.0b013e318233d637>
- Fitria, L., Ifdil, I., Erwinda, L., Ardi, Z., Afdal, A., Sari, A. P., ... & Churnia, E. (2018, November). Exploring internet addiction on adolescents. In *Journal of Physics: Conference Series* (Vol. 1114, No. 1, p. 012076). IOP Publishing. <https://doi.org/10.1088/1742-6596/1114/1/012076>
- Grubor, A., & Jakša, O. (2018). Internet marketing as a business necessity. *Interdisciplinary Description of Complex Systems: INDECS*, 16(2), 265-274.). <https://doi.org/10.7906/indecs.16.2.6>
- Havard, N., McGrath, S., Flanagan, C., & MacNamee, C. (2018, December). Smart building based on internet of things technology. In *2018 12th International conference on sensing technology (ICST)* (pp. 278-281). IEEE. <https://doi.org/10.1109/ICSensT.2018.8603575>
- Kwon, J. H., Chung, C. S., & Lee, J. (2011). The effects of escape from self and interpersonal relationship on the pathological use of Internet games. *Community mental health journal*, 47(1), 113-121. <https://doi.org/10.1007/s10597-009-9236-1>
- Longstreet, P., Brooks, S., & Gonzalez, E. S. (2019). Internet addiction: When the positive emotions are not so positive. *Technology in society*, 57, 76-85. <https://doi.org/10.1016/j.techsoc.2018.12.004>
- Love, H. (2009). *Feeling backward: Loss and the politics of queer history*. Harvard University Press.
- Masoud, M., Jaradat, Y., Manasrah, A., & Jannoud, I. (2019). Sensors of smart devices in the internet of everything (IoE) era: big opportunities and massive doubts. *Journal of Sensors*, 2019. <https://doi.org/10.1155/2019/6514520>
- Morgan, J., & Chng, S. (2018). Rising internet-based trade in the Critically Endangered ploughshare tortoise *Astrochelys yniphora* in Indonesia highlights need for improved enforcement of CITES. *Oryx*, 52(4), 744-750. <https://doi.org/10.1017/S003060531700031X>
- Naess, A., & Haukeland, P. I. (2008). *Life's philosophy: Reason and feeling in a deeper world*. University of Georgia Press.
- Park, A. (2020). The Social Construction of Internet Addiction: A Comparative Study of South Korea, Japan, and the US.
- Puspita, R. H., & Rohedi, D. (2018, February). The impact of internet use for students. In *IOP Conference Series: Materials Science and Engineering* (Vol. 306, No. 1, p. 012106). IOP Publishing. <https://doi.org/10.1088/1757-899X/306/1/012106>
- Saputra, R. A., Amrullah, R., Triono, A., & Refsi, B. (2022). Management of Improvement of Cyber Crime at the Time of the COVID-19 Pandemic Happening Restorative Justice. *Sch Int J Law Crime Justice*, 5(7), 286-293. <http://doi.org/10.36348/sijlcj.2022.v05i07.006>
- Sari, D., Rejekiningsih, T., & Muchtarom, M. (2020). Students' Digital Ethics Profile in the Era of Disruption: An Overview from the Internet Use at Risk in Surakarta City,

Indonesia. <https://doi.org/10.3991/ijim.v14i03.12207>

- Setti, S., Wanto, A., Syafiq, M., Andriano, A., & Sihotang, B. K. (2019, August). Analysis of Backpropagation Algorithms in Predicting World Internet Users. In *Journal of Physics: Conference Series* (Vol. 1255, No. 1, p. 012018). IOP Publishing. <https://doi.org/10.1088/1742-6596/1255/1/012018>
- Shi, J., Renwick, R., Turner, N. E., & Kirsh, B. (2019). Understanding the lives of problem gamers: The meaning, purpose, and influences of video gaming. *Computers in Human Behavior*, 97, 291-303. <https://doi.org/10.1016/j.chb.2019.03.023>
- Su, W., Han, X., Yu, H., Wu, Y., & Potenza, M. N. (2020). Do men become addicted to internet gaming and women to social media? A meta-analysis examining gender-related differences in specific internet addiction. *Computers in Human Behavior*, 113, 106480. <https://doi.org/10.1016/j.chb.2020.106480>
- Sukmawati, S., & Nensia, N. (2019). The role of Google Classroom in ELT. *International Journal for Educational and Vocational Studies*, 1(2), 142-145. <https://doi.org/10.29103/ijevs.v1i2.1526>
- Tabachuk, N. P., Ledovskikh, I. A., Shulika, N. A., Kazinets, V. A., & Polichka, A. E. (2018). Internet Activity and Internet Addiction: Where is the Borderline in Developing One's Information Competenc? *EURASIA Journal of Mathematics, Science and Technology Education*, 14(12), em1640. <https://doi.org/10.29333/ejmste/97828>
- Turel, O., & Bechara, A. (2019). Little video-gaming in adolescents can be protective, but too much is associated with increased substance use. *Substance use & misuse*, 54(3), 384-395. <https://doi.org/10.1080/10826084.2018.1496455>
- Van Deursen, A. J., Bolle, C. L., Hegner, S. M., & Kommers, P. A. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in human behavior*, 45, 411-420.). <https://doi.org/10.1016/j.chb.2014.12.039>
- Yan, Z. (2020). A basic model of human behavior with technologies. *Human behavior and emerging technologies*, 2(4), 410-415. <https://doi.org/10.1002/hbe2.208>