JOURNAL OF
CONTEMPORARY MEDICINE

DOI:10.16899/jcm.1244826
J Contemp Med 2023;13(2):251-257

Original Article / Orijinal Araştırma

The Change In Disease Severity and Medication Adherence of Patients Registered in Community Mental Health Center in the COVID-19 Pandemic

COVID-19 Pandemisinde Toplum Ruh Sağlığı Merkezine Kayıtlı Hastaların Hastalık Şiddeti ve İlaç Uyumlarında Ki Değişim

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Abstract

Aim: In this study, we aimed to investigate the changes in disease severity and medication adherence of patients who stayed away from Community Mental Health Center (CMHC) activities during the COVID-19 pandemic period although they participated more regularly in CMHC activities before the COVID-19 pandemic.

Material and Method: 54 patients who regularly attended CMHC were included in the study retrospectively. The first interview in this study was held in January 2020, and the second interview was held in June 2021. Positive and Negative Syndrome Scale (PANSS), Young Mania Rating Scale and Morisky Treatment Adherence Scale (MTAS) were evaluated in the study.

Results: The increase in the PANSS total 2 score compared to the PANSS total 1 score, the increase in the PANSS positive 2 score compared to the PANSS positive 1 score, the increase in the YMRS 2 score compared to the YMRS 1 score, and the decrease in the MMAS 2 score compared to the MMAS 1 score were found to be significant ($p<0.001$, $p<0.001$, $p=0.002$, $p<0.001$, respectively). Those who were registered in CMHC for a longer period of time and who participated in CMHC activities for more active days in a week had higher PANSS total 2 scores, PANSS positive 2 scores, YMRS 2 scores, and lower MMAS 2 scores.

Conclusion: In our study, patients who could not participate actively in CMHC due to social isolation had an increase in the severity of their disease and a decrease in their medication adherence.

Keywords: COVID-19, disease severity, medication adherence, community mental health center

Öz

Amaç: Bu çalışmada COVID-19 pandemisinden önce Toplum Ruh Sağlığı Merkezi (TRSM) faaliyetlerine daha düzenli katılım gösteren hastaların, pandemi sürecinde TRSM'den uzak kalmaları ile hastalık şiddetlerinde ki ve ilaç uyumlarında ki değişimi araştırmayı amaçladık.

Gereç ve Yöntem: TRSM'ye düzenli katılım gösteren 54 hasta retrospektif olarak çalışmaya dahil edildi. Bu çalışmada ki birinci görüşme 2020'nin ocak ayında, ikinci görüşme ise 2021'in haziran ayında yapıldı. Çalışmada Pozitif ve Negatif Sendrom Ölçeği (PANSS), Young Mani Derecelendirme Ölçeği ve Morisky Tedavi Uyum Ölçeği (MTUÖ) değerlendirildi.

Bulgular: PANSS toplam1 puanına göre PANSS toplam 2 puanında ki artış anlamlı bulunmuştur ($p=0,000<0,05$). PANSS pozitif 1 puanına göre PANSS pozitif 2 puanında ki artış anlamlı bulunmuştur ($p=0,000<0,05$). YMDÖ 1 puanına göre YMDÖ 2 puanında ki artış anlamlı bulunmuştur ($p=0,002<0,05$). MTUÖ 1 puanına göre MTUÖ 2 puanında ki düşüş anlamlı bulunmuştur ($p=0,000<0,05$). Daha uzun süredir TRSM'ye kayıtlı olan ve 1 haftada aktif gelinen gün sayısı daha fazla olanlarda PANSS toplam 2, PANSS pozitif 2, YMDÖ 2 puanları daha yüksek; MTUÖ 2 puanları daha düşüktü.

Sonuç: Çalışmamızda sosyal izolasyon nedeniyle TRSM'ye aktif katılım gösteremeyen hastaların hem hastalık şiddetlerinde artış, hem de ilaç tedavisine uyumlarında azalma olmuştur.

Anahtar Kelimeler: COVID-19, hastalık şiddeti, ilaç uyumu, toplum ruh sağlığı merkezi

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Received *(Geliş Tarihi)*: 31.01.2023 **Accepted *(Kabul Tarihi)*:** 07.02.2023

INTRODUCTION

The concept of community mental health deals with the psychiatric condition, treatment and care of individuals related to themselves and their environment. The community-based mental health model aims to ensure that patients are treated in the community without leaving the community, in order to continue their follow-up, to enable them to gain the functional skills necessary for vital processes, and to prevent hospitalizations.[1] Community mental health centers (CMHCs) are centers that are run with a community-based mental health model, where patients are supported with psychosocial services and treatments are offered to improve their functionality. In these centers, it is aimed to prevent hospitalizations by performing outpatient follow-up and treatment of patients. In addition, some tasks are offered for the patients to provide them with functionality in their lives. These are the centers where individual and group therapies are provided apart from the drug treatments. In these centers, it is also aimed to increase the quality of life of patients. Individuals with mental illnesses such as bipolar affective disorder, schizophrenia and other psychoses are registered in these centers.[2]

On December 31, 2019, the World Health Organization (WHO) began receiving information about some cases of pneumonia of unknown cause in the city of Wuhan, China. Later research determined that the cause was coronaviruses. This new virus, previously unidentified in humans, was named COVID-19. COVID-19 is a disease that can be fatal and can cause many medical consequences. But apart from all these, it also causes many mental and psychological problems.[3] The stress associated with the pandemic can be manageable for many people. However, the situation may be more challenging in those who are more prone to anxiety or have a previous mental illness.[4] As it is known, schizophrenia has a chronic course and often requires hospitalization. The difficult disease process and ongoing disability, especially in the acute stages of the disease, create a serious financial and moral burden. [5] The episodes of bipolar affective disorder (BAD) can be very intense and challenging, and even manic episodes often require hospitalization. A serious loss of functionality occurs in social, familial and occupational areas.[6] While the course of mental illnesses such as schizophrenia and BAD was already challenging, individuals with serious mental illnesses were affected much more negatively in the COVID-19 pandemic.[7]

Owing to the fact that one of the most important measures to combat the pandemic is social isolation, the living conditions, social aspects, habits, and more importantly, the psychological status of individuals have been significantly affected.[3] In order to control and eliminate COVID-19, many restrictions, especially "lockdowns", were applied and measures were taken in many countries throughout the pandemic.[8] Within the scope of the precautions taken in our country, some measures against the pandemic had to be implemented in CMHCs, like in many other institutions. The patients had to stay away from CMHC activities for a while due to the precautions taken in consideration of the necessity of social isolation and the fact that the patients participating in CMHC services could not follow the important rules such as mask use and social distance.

Since CMHCs have an important place in the follow-up of chronic psychiatric diseases, we wanted to determine the impact of the difficult process experienced during the COVID-19 pandemic on patients. In this study, we aimed to investigate the changes in disease severity and medication adherence of patients who stayed away from CMHC activities during the COVID-19 pandemic period although they participated more regularly in CMHC activities before the COVID-19 pandemic.

MATERIAL AND METHOD

Sample

There are 543 patients registered in Elazığ CMHC. 54 of these patients come to CMHC at least once a week and benefit from CMHC activities. These 54 patients were considered as regular participants in CMHC. Some patients come and participate in CMHC from time to time. Home visits are planned for the remaining patients, and they are invited to the CMHC from time to time and examined. Personal care plan files are available for all patients registered in CMHC. These files are prepared according to the personal needs of that patient and necessary interventions are made. There are many activities such as music, painting, handicrafts and sports for patients who come to CMHC. After the start of the COVID-19 pandemic, the number of patients participating in CMHC began to decrease. The number of days in which patients with active participation came to CMHC decreased. Elazığ CMHC did not provide face-to-face service from January 2021 to May 2021. In this process, patients were followed up with online interviews. After the CMHC was reopened in May 2021, a limited number of patients - approximately 10 patients per day - were admitted into the center.

Implementation

Patients diagnosed with BAD, schizophrenia or other psychosis diagnoses according to DSM-5 diagnostic criteria, who were registered in CMHC and who regularly participated in CMHC activities for at least 6 months before the pandemic, were included in the study. Exclusion criteria from the study were determined as the presence of mental retardation, the presence of a cognitive and a neurological deficit to such an extent that the participants cannot comprehend the requirements of the scales.

54 patients who attended CMHC more regularly were included in this study. Since none of these patients had exclusion criteria, all of them were included in the study. In general, within the care plans of CMHC, patient interviews are made regularly, and their clinical course is recorded in their personal files. All data in the study were obtained from the records retrospectively. The first interview in this study was held in January 2020, before the start of the COVID-19 pandemic in Turkey. The second meeting was held in June 2021, later in the pandemic, after the start of the COVID-19 pandemic and the lockdown and restriction process.

Both interviews were carried out face to face. The Positive and Negative Syndrome Scale was applied to the patients diagnosed with schizophrenia and other psychoses. The Young Mania Rating Scale was applied to the patients with BAD. Morisky Medication Adherence Scale and sociodemographic data form were applied to all patients. The 1st scales were applied in the first interview before the pandemic started, and the 2nd scales were applied in the second interview after the pandemic started.

The study was conducted based on the ethical principles and in accordance with the principles of the Declaration of Helsinki. The study was approved by the Fırat University Clinical Research Ethics Committee (Date: 26.01.2023, No: 2023/02-15).

Data Collection Tools

Sociodemographic Data Form

The sociodemographic data form was prepared by the researchers. There are some data such as age, gender, educational status, background, employment status, and COVID history.

Positive and Negative Syndrome Scale (PANSS)

It was developed by Kay et al. in 1987.[9] The Turkish validity and reliability study of this scale was carried out by Kostakoğlu et al. in 1999. Of the 30 psychiatric parameters evaluated, 7 belong to the positive syndrome subscale, 7 belong to the negative syndrome subscale, and the remaining 16 to the general psychopathology subscale. The scale has a 7-point Likert type. Each item is evaluated between 1 and 7. 4 measurements are made: positive, negative and general psychopathology scores and a total PANSS score. An increase in the scores obtained indicates an increase in the severity of the disease.[10]

Young Mania Rating Scale (YMRS)

Developed by Young et al. (1978), this scale consists of 11 items.[11] It is used to measure the clinical status of the patient in the last week and the severity of the disease. 7 items are in the 5-point Likert type, and the other 4 items are in the 9-point Likert type. A minimum of 0 and a maximum of 60 points can be obtained from the scale. It is thought that the higher the score is, the higher the severity of mania is. The Turkish validity and reliability study of this scale was performed by Karadağ et al. in 2001.[12]

Morisky Medication Adherence Scale-8 Items (MMAS-8)

It is a scale used to evaluate patients' adherence to drug therapy. It was developed by Morisky et al.[13] It consists of 8 questions. In the first 7 questions, one can get 0 point for each "yes" answer and 1 point for each "no" answer. Question 8 is in 5-point Likert type. If the score obtained according to the answers given by the patient to the scale is <6, it is considered as low level of medication adherence, if it is between 6 and <8, it is considered as moderate level of medication adherence, and if it is 8, it is considered as high level of medication adherence. The Turkish validity and reliability study was performed by Aşılar et al. in 2014.[14]

Statistical Analysis

The data obtained in the research were evaluated in the computer environment through the SPSS 22.0 statistical program. Frequency and percentage analyses were used to determine the descriptive characteristics of the patients participating in the study and mean and standard deviation statistics were used to analyze the scales. Kurtosis and Skewness values were examined to determine whether the research variables showed a normal distribution. It was determined that the research variables showed a normal distribution. Parametric methods were used in the analysis of the data. The change in the scores of the first measurement and the second measurement was analyzed with the dependent groups t-test. T-test, one-way analysis of variance (Anova) and post hoc analyses were used to examine the differences in scale levels according to the descriptive characteristics of the patients.

RESULTS

Participants consisted of 44 men and 10 women. The mean age was 41.407. The distribution of sociodemographic characteristics of the patients is shown in **Table 1**.

Table 1. Distribution of Sociodemographic Data

	Frequency (n)	Percentage (%)
Gender		
Male	44	81.5
Female	10	18.5
Marital Status		
Married	10	18.5
Single/Widow(er)	44	81.5
Education Level		
Illiterate	22	40.7
Primary School	22	40.7
Secondary School	10	18.5
Employment Status		
Employed	6	11.1
Unemployed	48	88.9
Diagnoses		
BAD	28	51.9
Schizophrenia and other psychoses	26	48.1
The duration of being registered in CMHC		
<1 Year	9	16.7
1-5 Years	20	37.0
>5 Years	25	46.3
The Number of Days for which Patients Show Active Participation in 1 Week in CMHC		
1 Day	9	16.7
2-3 Days	20	37.0
4-5 Days	25	46.3
History of COVID-19		
Present	14	25.9
None	40	74.1
	Mean	SD
Age	41.407	10.262

BAD: Bipolar Affective Disorder, CMHC: Community Mental Health Center

When the change of the scales in the 2nd interview compared to the 1st interview was examined, the increase in the PANSS total 2 score ($\bar{x}$=66.000) compared to the PANSS total 1 score ($\bar{x}$=55.654) was significant (t=-5.308; p<0,001). The increase in PANSS positive 2 score ($\bar{x}$=31.154) compared to PANSS positive 1 score ($\bar{x}$=21.231) was significant (t=-5.004; p<0.001). The increase in the YMRS 2 score ($\bar{x}$=25.357) compared to the YMRS 1 score ($\bar{x}$=18.214) was found to be significant (t=-3.399; p=0.002<0.05). Compared to the MMAS 1 score ($\bar{x}$=5.741), the decrease in the MMAS 2 score ($\bar{x}$=4.463) was found to be significant (t=4.776; p<0.001) (**Table 2**).

The differentiation status of the scales applied in the 2nd interview according to some sociodemographic data is shown in **Table 3** (**Table 3**).

Table 2. Change of Scales Between the 1st and 2nd Interviews

Scales	N	Mean ± SD	t	p
PANSS total1	26	55.654±9.099	-5,308	<0.001
PANSS total2	26	66.000±14.218		
PANSS positive1	26	21.231±9.446	-5,004	<0.001
PANSS positive2	26	31.154±10.739		
PANSS negative1	26	17.615±7.627	-0,947	0.353
PANSS negative2	26	17.846±7.724		
PANSS general psychopathology 1	26	16.808±6.645	-0,795	0.434
PANSS general psychopathology 2	26	17.000±6.663		
YMRS1	28	18.214±8.774	-3,399	0.002
YMRS2	28	25.357±12.615		
MMAS1	54	5.741±1.277	4,776	<0.001
MMAS2	54	4.463±1.870		

Dependent Groups T-Test, MMAS: Morisky Medication Adherence Scale, PANSS: Positive and Negative Syndrome Scale, YMRS: Young Mania Rating Scale.

Table 3. Differentiation of the Scales Applied in the 2nd Interview According to Some Sociodemographic Data

Sociodemographic Data	n	PANSS total 2	PANSS positive 2	PANSS negative 2	PANSS general psychopathology 2	YMRS 2	MMAS 2
The duration of being registered in CMHC		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
<1year	4	53.50±13.20	17.50±12.61	16.75±4.92	19.25±7.58	11.80±2.16	6.22±0.83
1-5 Years	10	59.20±7.23	26.20±6.40	18.30±6.96	14.70±4.69	19.20±7.36	5.25±1.61
>5 Years	12	75.83±12.83	39.83±3.58	17.83±9.41	18.16±7.68	35.30±10.02	3.20±1.44
F=		9.21	22.05	0.05	1.00	18.88	19.40
p=		0.001	<0.001	0.94	0.38	<0.001	<0.001
PostHoc=		3>1, 3>2 (p<0.05)	2>1, 3>1, 3>2 (p<0.05)			3>1, 3>2 (p<0.05)	1>3, 2>3 (p<0.05)
The Number of Days for which Patients Show Active Participation in 1 Week in CMHC		**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**
1 Day	4	58.00±13.31	20.75±11.23	17.00±3.36	20.25±5.50	9.60±2.70	6.33±1.41
2-3 Days	8	60.37±15.48	24.62±10.48	22.00±7.01	13.75±5.87	22.58±8.70	5.05±1.57
4-5 Days	14	71.50±12.12	37.85±5.05	15.71±8.36	17.92±7.01	35.54±9.79	3.32±1.46
F=		2.60	10.90	1.82	1.64	16.99	15.83
p=		0.09	<0.001	0.18	0.21	<0.001	<0.001
PostHoc=			3>1, 3>2 (p<0.05)			2>1, 3>1, 3>2 (p<0.05)	1>2, 1>3, 2>3 (p<0.05)
History of COVID-19 Infection		**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**
BAD	Schizophrenia and other psychoses						
Present 6	8	59.62±9.88	27.62±14.97	15.25±6.04	16.75±6.15	23.50±10.40	4.78±2.15
None 22	18	68.83±15.14	32.72±8.29	19.00±8.25	17.11±7.04	25.86±13.32	4.35±1.77
t=		-1.56	-1.12	-1.15	-0.12	-0.40	0.74
p=		0.13	0.39	0.26	0.9	0.69	0.45
Diagnoses		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
BAD	28	-	-	-	-	-	4.92±1.74
Schizophrenia and other psychoses	26	-	-	-	-	-	3.96±1.90
t=							1.94
p=							0.057

F: Anova Test; t: Independent Groups T-Test; PostHoc: Tukey, LSD, BAD: Bipolar Affective Disorder, MMAS: Morisky Mental Adherence Scale, PANSS: Positive and Negative Syndrome Scale, CMHC: Community Mental Health Center, YMRS: Young Mania Rating Scale.

DISCUSSION

According to the results we obtained in our study, PANSS total, PANSS positive and YMRS scores were significantly higher and MMAS scores were significantly lower in the second interview after the start of the COVID-19 pandemic, compared to the first interview we conducted before the COVID-19 pandemic.

The COVID-19 pandemic affected the whole world in a short time and changed the living conditions considerably. In order to prevent the transmission of this viral epidemic all over the world, many measures were taken, such as restricting social and community movements, closing educational institutions, isolating infected cases, quarantining suspected cases and imposing lockdown across the country. These measures were expected to be effective in preventing transmission.[15] On the other hand, while cases with a rate of 96% and deaths with a rate of 76% are expected for communities that do not apply quarantine measures, cases with a rate of 44% and deaths with a rate of 31% are expected in communities where quarantine measures are applied.[16] Taking preventive measures against the pandemic has reduced the incidence and death rates. Although these measures have benefits, it also causes many mental problems such as feeling frustrated, unhappiness, panic and fear.[15] For example, in the general population in a systematic review, depression (14.6% to 48.3%), anxiety (6.33 to 50.9%), post-traumatic stress disorder (7% to 53.8%), psychological distress (34.43% to 38%), and stress (8.1% to 81.9%) were detected.[17] Many measures against the pandemic, such as social isolation, were implemented in our country.

Coronaviruses may be associated with psychotic symptoms through an immune-related mechanism, and therefore COVID-19 infection may exacerbate symptoms in patients with schizophrenia.[18] In addition, corticosteroids can be applied for treatment and these interventions may cause psychosis.[19] As it is known, patients with schizophrenia have lower quality and smaller social networks compared to the general population.[20] Social support has been associated with higher scores on measures of recovery in schizophrenia. And again, living in contact with society and social integration have been associated with recovery in schizophrenia.[21] The social isolation rules that they must follow due to the COVID-19 pandemic will pose a risk for these patients. In our study, we observed an increase in the severity of the disease in patients with schizophrenia and other psychoses during the pandemic period. Compared to the 1st interview before the COVID-19 pandemic, the PANSS total and PANSS positive scores in the 2nd interview after the pandemic started were higher.

Because important life events may trigger mood instability, BAD patients may constitute a vulnerable group against COVID-19 measures.[22] With pandemic measures, there are changes in biological rhythms such as sleep, activity, and social rhythm.[23] Thus, more potential adverse effects occur in patients with bipolar disorder compared to healthy controls.[24] Bipolar disorder patients may experience intense emotions arising from the serious health crisis caused by the COVID-19 pandemic and are vulnerable to stress that may arise from radical changes in life habits such as social isolation.[25] This pandemic and the measures necessary to control it have significant risks for the recurrence of bipolar disorder.[26] In a longitudinal study conducted during the COVID-19 pandemic, it was observed that bipolar disorder patients, compared to the controls, were more affected by "stay at home" calls made within the scope of measures taken against the pandemic.[27] In another study, it was observed that there was an increase in manic symptomatology in the early stages of the pandemic compared to the period prior to COVID-19 era in bipolar disorder patients. And these symptoms decreased after quarantine measures were eased.[28] In our study, there was an increase in the severity of the disease in BAD patients during the pandemic period. Compared to the 1st interview before the COVID-19 pandemic, the YMRS scores in the 2nd interview carried out after the pandemic started were higher.

In the COVID-19 pandemic, recurrences in severe mental disorders may result in failure to implement social distancing or other preventive strategies, failure to seek medical attention, and failure to comply with expected treatment.[29] In a study investigating medication adherence of patients with psychiatric illness during the COVID-19 pandemic, it was observed that 39% of patients did not comply with the treatment, while 26% of them had moderate and 35% of them had poor medication adherence.[30] In a study conducted in a psychiatric hospital, it was found that there was a 49% decrease in the use of long-acting injectable risperidone, and a 70-90% decrease in the use of long-acting injectable olanzapine, aripiprazole, and paliperidone in March 2020 compared to the previous 3-month period.[31] In a study that included patients with schizoaffective disorder, BAD, and schizophrenia during the COVID-19 pandemic, it was observed that the symptoms of 30% of the patients worsened during quarantine and 1 out of 5 patients discontinued their psychiatric medications.[32] In the results of our study, there was a significant decrease in medication adherence of the patients during the pandemic period. Compared to the 1st interview held before the COVID-19 pandemic, the MMAS scores in the 2nd interview carried out after the pandemic started were lower.

It should be emphasized that the perceived distress of those with serious mental illness due to the COVID-19 pandemic and mass quarantine is greater than that perceived by the general population. In a study conducted in Italy one month after the quarantine, those with severe mental illness were compared with the healthy controls. In the results they obtained, it was seen that the risk of perceiving more stress related to the pandemic was four times higher, and they had a twice-three times higher risk of anxiety and depression. Similar results were found in patients with schizophrenia and mood disorders.[33] In our study, according to the results

of the second interview, patients with longer registered time in CMHC and more days for which patients show active participation in 1 week in CMHC had higher disease severity and lower medication adherence. This result may indicate that longer and more participation in CMHC activities will be supportive to maintain disease severity and medication adherence. In a study conducted to show the effects of the services provided in CMHC on the patients, it was found that the patients' adherence to medical treatment, quality of life, general and social functionality and insight increased significantly thanks to the services provided, while the symptoms of their diseases decreased significantly.[34] In another study, it was shown that psychosocial adjustment services in addition to pharmacotherapy received by patients in CMHC contributed positively to patients' functionality, insight, medication adherence, and clinical data.[35] Our study also shows that the pandemic process, in which CMHC services are not sufficient, causes negative consequences for patients in terms of both disease severity and medication adherence.

Our study had some limitations. This study was conducted with a limited sample size and in a single center. New studies to be conducted in centers with more patients participating in CMHC activities are important in terms of supporting the results of this study. In addition, in this study, the drugs used by the patients were not determined while evaluating their medication adherence.

CONCLUSION

Social support is very important in the treatment of mental illnesses. Developed with a community-based mental health model, CMHCs offer important opportunities for patients to adapt to society, for their social lives, their medication adherence, and the follow-up and treatment of their diseases. The COVID-19 pandemic has had negative effects in our country as it has affected the whole world. Social isolation methods applied to prevent the pandemic have also affected individuals with mental illnesses, just like the general population. In our study, it was seen that patients who could not participate actively in CMHC due to social isolation had an increase in the severity of their disease and a decrease in their medication adherence. These results show both the negative effects of the COVID-19 pandemic on patients and the importance of CMHC services for the patients.

ETHICAL DECLARATIONS

Ethics Committee Approval: This study was approved by the ethics committee of Fırat University (Date: 26.01.2023, No: 2023/02-15).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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