

Premenstrual Dysphoric Disorder and Early Maladaptive Schemas

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Abstract

In this study, it was aimed to investigate the early maladaptive schemas of patients with premenstrual dysphoric disorder (PMDD). Patients who were followed up with the diagnosis of premenstrual syndrome (PMS) in the obstetrics outpatient clinic and referred to the psychiatry outpatient clinic to be evaluated in terms of PMDD diagnosis according to Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) and diagnosed with PMDD as a result of the psychiatric examination were included in the study. 160 individuals (80 individuals as PMDD, 80 individuals as healthy control group) were included in the study. A demographic and clinical evaluation form was applied to all participants during the psychiatric interview. Then, Young Schema Questionnaire-Short Form 3 (YSQ-SF3) was administered. The mean age of the participants was 24.32±4.64. Of all participants, 22 (13.75%) were married and 138 (86.25%) were single. The majority of the participants, 112 (70%), were university graduates and 94 (59%) had a medium economic level. Punitiveness, emotional suppression and vulnerability subscale scores of the patient group diagnosed with PMDD were higher than the healthy controls ($p<0.05$). Approval-seeking, pessimism, enmeshment/dependence, and insufficient self-control schema scores were also found to be borderline insignificant in favor of the patient group. Emotional suppression scores of the single participants were higher than the married ones ($p=0.01$). When compared according to education levels, approval-seeking ($p=0.021$) and high standards ($p=0.023$) scores of those with a higher education level were found to be higher than those with a lower education level. For those living in the city, schema scores of enmeshment/dependence ($p=0.027$), punitiveness ($p=0.021$) and endurance ($p=0.036$) were calculated lower than the other groups. The results of the study presented that the schemas of punitiveness, emotional suppression and vulnerability were higher in the patient group than in the healthy controls. Approval-seeking, pessimism, enmeshment/dependence, and insufficient self-control schema scores were higher in the patient group, although they were not statistically significant. Early maladaptive schema subscale scores of the patients were also found to be associated with some clinical variables.

Keywords: Premenstrual dysphoric disorder, early maladaptive schemas, depression.

Öz

Premenstruel Disforik Bozukluk ve Erken Dönem Uyumsuz Şemalar

Bu çalışmada, premenstrüel disforik bozukluğu (PMDD) olan hastaların erken dönem uyumsuz şemalarının araştırılması amaçlanmıştır. Premenstrüel sendrom (PMS) tanısıyla takip edilen ve PMDD tanısı açısından psikiyatri polikliniğine yönlendirilen, psikiyatrik muayene sonucunda DSM-5 (Mental Bozuklukların Tanısal ve İstatistiksel El Kitabı, 5. baskı) kriterlerine göre PMDD tanısı konan hastalar çalışmaya alınmıştır. Çalışmaya toplamda 160 kişi (80 kişi PMDD, 80 kişi sağlıklı kontrol grubu) dahil edilmiştir. Psikiyatrik görüşme sırasında tüm katılımcılara demografik ve klinik bir değerlendirme formu uygulanmıştır. Ardından Young Şema Anketi-Kısa Form 3 (YSQ-SF3) uygulanmıştır. Katılımcıların yaş ortalaması 24,32±4,64'tür. Tüm katılımcıların 22'si (%13,75) evli, 138'i (%86,25) bekar olup, 112'si (%70) üniversite mezunu ve 94'ü (%59) orta düzeyde ekonomik gelire sahipti. PMDD tanısı konulan hasta grubunun cezalandırıcılık, duyguları bastırma ve dayanıksızlık alt ölçek puanları, sağlıklı kontrol grubundan daha yüksekti ($p<0,05$). Onay arayıcılık, karamsarlık, iççelik/bağımlılık ve yetersiz özenetim şema puanları da hasta grubu lehine sınırlı derecede anlamlı bulunmuştur. Bekar katılımcıların duygusal bastırma puanları, evli olanlardan daha yüksektir ($p=0,01$). Eğitim düzeylerine göre karşılaştırıldığında, daha yüksek eğitim düzeyine sahip olanlarda onay arayıcılık ($p=0,021$) ve yüksek standartlar ($p=0,023$) puanlarının daha yüksek olduğu görülmüştür. Şehirde yaşayanlar arasında iççelik/bağımlılık ($p=0,027$), cezalandırıcılık ($p=0,021$) ve dayanıksızlık ($p=0,036$) şema puanlarının diğer gruplara göre daha düşük olduğu belirlenmiştir. Çalışmanın sonuçları, cezalandırıcılık, duyguları bastırma ve dayanıksızlık şemalarının hasta grubunda sağlıklı kontrol grubuna göre daha yüksek olduğunu göstermiştir. Onay arayıcılık, karamsarlık, iççelik/bağımlılık ve yetersiz özenetim şema puanları hasta grubunda daha yüksek bulunmuş, ancak istatistiksel olarak anlamlı değillerdir. Hastaların erken dönem uyumsuz şema alt ölçek puanlarının bazı klinik değişkenlerle ilişkili olduğu bulunmuştur.

Anahtar Kelimeler: Premenstruel disforik bozukluk, erken dönem uyumsuz şemalar, depresyon

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INTRODUCTION

Premenstrual symptoms include mental and behavioral symptoms that occur in a cyclical pattern before menstruation in women of reproductive age and decrease after menstruation (Yonkers, 2008). It affects 90% of menstruating women (Braverman, 2007). While 30-40% of these women experience premenstrual syndrome, 3-8% of women are diagnosed with premenstrual dysphoric disorder (PMDD), which has more severe clinical symptoms (Ryu & Kim, 2015; Dennerstein et al., 2009). PMDD is listed as a separate diagnosis under the title of depressive disorders in Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) (APA, 2013). PMDD is defined as psychological and somatic symptoms that are observed in the late luteal phase of the menstrual cycle and improve with menstruation, are predictable, cyclical, and cause dysfunction (Raplin & Winer, 2009). Mood changes, irritability, anger, anger control problem and anxiety are the main symptoms of PMDD (Çoban et al., 2021). In order for PMDD to be diagnosed, at least 5 of 11 symptoms including physical and psychological symptoms such as marked emotional lability, extreme irritability, swelling in the breasts, and change in appetite, as specified in DSM-5, in at least 2 consecutive menstrual periods, and impaired functionality of the person are required (APA, 2013). Although the etiology is not known for certain, premenstrual symptoms are thought to result from increased central nervous system sensitivity to hormonal fluctuations in the menstrual cycle (Hantsoo & Epperson, 2015).

Early maladaptive schemas (EMS) are one of the most emphasized areas in studies on the etiology of psychiatric diseases (Young et al., 2003; Tariq et al., 2021; Cockram et al., 2010; Tan et al., 2018). EMS are defined as structures that quite permanent and stable, consisting of memories, cognitions, emotions, and bodily sensations related to one's relationship with oneself and others in childhood. These structures may disrupt the functionality of the individual, thereby affecting the individual's quality of life.

It is suggested that EMSs occur due to unmet needs and traumatic experiences in childhood. Young et al. have defined 5 schema domains (separation and rejection, impaired autonomy, impaired boundaries, others-directedness, hypervigilance) and 18 schemas (abandonment, suspiciousness, emotional deprivation, defectiveness, social isolation, addiction, frailty, immature self, failure, righteousness, insufficient self-control, submissiveness,

self-sacrifice, approval-seeking, pessimism, emotional suppression, high standards and punitiveness) (Young et al., 2003). Previous studies have shown that there is an association between EMS and depressive disorder (Tariq et al., 2021), anxiety disorders (Kunst et al., 2020) and personality disorders (Tan et al., 2018; Kunst et al., 2020). In the literature, while there are studies showing that there is an association between depressive disorder and EMS, and that all EMSs are higher in patients with chronic depression than those without chronic depression (Hawke & Provencher, 2011), there is no study investigating the association between PMDD and EMS, which is under the main heading of DSM-5 depressive disorders. In our study, we hypothesized that patients with PMDD would be more likely to have EMS than healthy controls. In the light of all this information and our hypothesis, we aimed to examine the association between PMDD patients and EMS by comparing them with healthy controls.

METHODS

The study was approved by the Local Ethics Committee for Non-Invasive Studies of Tokat Gaziosmanpaşa University of Medicine with project number 19-KAEK-176. (Meeting date: 02.09.2021; meeting number: 83116987-655). The study was conducted in accordance with the Declaration of Helsinki.

Patients who were followed up with the diagnosis of PMS in obstetrics clinic of Tokat Gaziosmanpaşa University between 01.10.2021 and 01.10.2022 and referred to the psychiatry outpatient clinic to be evaluated in terms of PMDD according to DSM-5 were included in the study. Individuals who volunteered to participate in the study, who were diagnosed with PMDD according to DSM-5 as a result of the psychiatry examination, who were literate and had the intellectual capacity to give written consent and to fill in the given forms were included in the study. Patients who had a poor general condition, could not give written consent, had a chronic disease that required regular treatment, were treated for any neoplasm diagnosis, and did not agree to participate in the study were not included in the study. Patients who were currently receiving psychiatric treatment or had alcohol/substance use disorders were excluded from the study. Patients with psychiatric symptoms at a level that could be diagnosed according to DSM-5 criteria in the mental state examination were not included in the study. The healthy control group consisted

of individuals who applied to the psychiatry outpatient clinic for job application or general examination, did not have psychiatric disease according to DSM-5 diagnostic criteria, did not use alcohol/substance, could match the patient group with demographic data and met the inclusion criteria.

Demographic and clinical evaluation form was applied to all participants during the psychiatric interview. Then, Young Schema Questionnaire-Short Form 3 (YSQ-SF3) was applied.

Sociodemographic Data and Clinical Evaluation Form

It was created by the researchers upon the literature investigation for the purposes of the study. It includes demographic data such as age, marital status, education level, economic status. In addition, there are clinical evaluation questions such as whether the participant has received psychiatric treatment before or currently.

Young Schema Questionnaire-Short Form 3 (YSQ-SF3)

It was developed by Young in 1990. The first version of the questionnaire is a short form with 75 items. The third version of the 90-item short form of the Young Schema Questionnaire (YSQ-SF3) was used in our study (Ypung, 1990). The validity and reliability study of this version of the questionnaire in our country was conducted by Soygüt, Karaosmanoğlu, and Çakır (2009) in a university sample. With this study, 5 schema domains were reached in the Turkish form of the questionnaire. These domains are disconnection, impaired autonomy, impaired boundaries, others-directedness, and high standards. These five schema domains also have sub-dimensions with 14 factors. These sub-dimensions are emotional deprivation, social isolation/insecurity, emotional suppression, imperfection, nesting/dependence, abandonment, failure, pessimism, vulnerability to threats, privilege/insufficient self-control, self-sacrifice, punitiveness, high standards and approval-seeking. It is a 90-item Likert-type questionnaire with each item scored between 1 and 6 (1=Totally wrong for me, 6=Describes me perfectly).

Statistical Analysis

In the analysis, the ready-to-use statistical software SPSS for Windows 20 package program (Statistical Package for

Social Sciences for Windows 20, SPSS Inc., Chicago, IL) was used. Descriptive statistics are presented with frequency, percentage, mean, standard deviation, median, minimum, maximum, and 25%-75% percentile (Q1-Q3) values. With the Kolmogorov-Smirnov test, the normality distribution of the data was checked by examining the histogram, q-q plot, skewness and kurtosis values. In the analysis of the difference between the two groups according to numerical data, the Mann-Whitney U Test was used because the data did not fit the normal distribution. In the analysis of the difference between the numerical values of more than two groups, the Kruskal Wallis H Test was applied because the distribution of the data did not comply with the normal distribution. The associations between numerical data were evaluated with the Spearman Correlation Test, as the data did not fit the normal distribution. Pearson Chi-Square Test was used because the ratio of cells with an expected value less than 5 was less than 20% in the associations between categorical data. The p value less than 0.05 was considered statistically significant.

RESULTS

One hundred and sixty individuals (80 individuals as PMDD, 80 individuals as healthy control group) were included in the study. When the general characteristics of the participants were analyzed, the mean age of the participants was 24.32 ± 4.64 . Of all participants, 22 (13.75%) were married and 138 (86.25%) were single. The majority of the participants, 112 (70%), were university graduates and 94 (59%) had a medium economic level. The distribution of demographic data according to the groups was presented in Table 1.

The mean schema questionnaire scores of the patient group diagnosed with PMDD and the healthy control group were compared. Punitiveness, emotional suppression and vulnerability subscale scores of the patient group were detected higher than the healthy controls ($p < 0.05$). Approval-seeking, pessimism, enmeshment/dependence, and insufficient self-control schema scores were also found to be borderline insignificant in favor of the patient group. Mann-Whitney U test results of PMDD patient and healthy control groups were presented in Table 2.

Schema scores of all participants were compared according to their marital status. Emotional suppression scores of the single participants were higher than the married ones ($p = 0.01$). When compared with respect to education

Table 1: Distribution of the demographic characteristics of the participants among the groups

	<i>PMDD</i> (<i>n</i> =80) <i>n</i> (%)	<i>Controls</i> (<i>n</i> =80) <i>n</i> (%)	<i>p</i>
Age (Mean±SD)	22.83±3.63	25.81±5.02	
Marital Status Married/single	7/73 (9/91%)	15/65 (19/81%)	0.066
Educational status Under high school High school and above	26 (33%) 54 (68%)	22 (28%) 58 (73%)	0.49
Location lived City/town District/village	62 (78%) 18 (23%)	77 (96%) 3 (4%)	<0.001
Economical situation Low Middle High	26 (56%) 29 (33.3%) 25 (10.7%)	1 (2%) 8 (16%) 41 (82%)	<0.001

*Mann-Whitney U test was used for age and Pearson Chi-Square Test was used for other parameters.
**Age is presented as Mean ± Standard Deviation, other parameters as n (%).

Table 2: Comparison of schema scores in patients with PMDD

<i>Schema Domains</i>	<i>PMDD</i> (<i>n</i> =80) <i>Mean</i> ± <i>SD</i>	<i>Controls</i> (<i>n</i> =80) <i>Mean</i> ± <i>SD</i>	<i>U value</i>	<i>p</i>
Emotional deprivation	7.74±3.33 (7)	7.71±3.53 (6)	3185	0.958
Failure	9.92±3.19 (9.5)	9.75±4.47 (8)	2781.5	0.149
Pessimism	11.58±4.92 (10)	10.56±5.6 (10)	2669	0.069
Social isolation	13.54±5.41 (12)	13.6±6.5 (12)	3032.5	0.566
Emotional suppression	10.67±4.2 (10)	9.05±4.45 (8)	2308	0.002*
Approval-seeking	17.74±5.67 (18)	15.75±7.5 (15)	2637.5	0.054
Enmeshment/dependence	16.08±5.11 (15)	15.2±6.39 (14)	2668	0.069
Insufficient self-control	20.45±6.56 (20)	18.39±8.97 (18.5)	2672	0.071
Self-sacrifice	13.29±4.7 (12.5)	12.49±6.51 (12)	2838	0.216
Abandonment	8.34±3.54 (8)	8.39±4.7 (7)	2920	0.332
Punitiveness	17.24±5.8 (17)	14.08±6.92 (13)	2251.5	0.001*
Imperfection	8.94±4.34 (7.5)	8.3±3.64 (7)	2911	0.305
Vulnerability	10.75±4.54 (10)	9.08±4.11 (8)	2383.5	0.005*
High standards	7.35±3.03 (7)	7.26±3.8 (6)	3000	0.492

Abbreviations given in the table: Mean±SD: Mean ± Standard Deviation
*Mann Whitney U test was used in the calculations.
**p<0.05

Table 3: The association between the clinical characteristics of the participants and their early maladaptive schemas

ED	ED	F	Pe	SI	ES	AS	I/D	ISC	SS	A	Pu	I	C	HS
F	.441	1	.492	.424	.410	.512	.415	.231	.172	.338	.400	.621	.242	.232
Pe	.415	.492	1	.401	.353	.654	.536	.383	.358	.401	.652	.406	.518	.254
SI	.434	.424	.401	1	.482	.472	.575	.401	.310	.385	.488	.490	.424	.485
ES	.448	.410	.353	.482	1	.297	.413	.142	.485	.349	.289	.458	.475	.358
AS	.277	.512	.654	.472	.297	1	.400	.527	.325	.403	.712	.345	.592	.401
I/D	.488	.415	.536	.575	.413	.400	1	.465	.349	.332	.479	.388	.341	.358
ISC	.290	.231	.383	.401	.142	.527	.465	1	.321	.346	.544	.213	.388	.351
SS	.292	.172	.358	.310	.485	.325	.349	.321	1	.307	.322	.188	.516	.02
A	.463	.338	.401	.385	.349	.403	.332	.346	.307	1	.434	.573	.385	.194
Pu	.321	.400	.652	.488	.289	.712	.479	.544	.322	.434	1	.301	.463	.481
I	.515	.621	.406	.490	.458	.345	.388	.213	.188	.573	.301	1	.260	.173
C	.323	.242	.518	.424	.475	.592	.341	.388	.516	.385	.463	.260	1	.329
HS	.233	.232	.254	.485	.358	.401	.358	.352	.02	.194	.481	.173	.329	1

The abbreviations given in the table are the abbreviations of the Young Schema Questionnaire sub-domains

ED: Emotional deprivation, **F:** Failure; **Pe:** Pessimism; **SI:** Social isolation; **ES:** Emotional suppression; **AS:** Approval-seeking; **I/D:** enmeshment/dependence; **ISC:** Insufficient self-control; **SS:** Self-sacrifice; **A:** Abandonment; **Pu:** Punitiveness; **I:** Imperfection; **V:** Vulnerability; **HS:** High standards.

The values given in the table are "r" values.

level, those with higher education level had higher approval-seeking ($p=0.021$) and high standards ($p=0.023$) scores than those with lower education level. The schema scores of enmeshment/dependence ($p=0.027$), punitiveness ($p=0.021$) and resilience ($p=0.036$) were observed lower than the other groups in the city-dwellers. No association was found between the economic levels of the participants and their schemas.

Education level and high EMS standards of the patient group were positively and weakly correlated ($r=.248$, $p=0.026$). Economic level and punitiveness sub-domain was positively and weakly correlated ($r=.291$; $p=0.019$). No correlation was found between the age of PMDD patients and EMS subscales ($p>0.05$). Of the associations of the schemas, imperfection-failure ($r=.621$), punitiveness-pessimism ($r=.652$), punitiveness-approval-seeking ($r=.712$), pessimism-approval-seeking ($r=.654$) were strongly correlated. Of other sub-domains, self-sacrifice-failure ($r=.172$), self-sacrifice-defectiveness ($r=.188$), insufficient self-control-emotional suppression ($r=.142$), abandonment-high standards ($r=.194$), imperfection-high standards ($r=.173$) were not correlated. All other sub-domains were found to be correlated with each other (Table 3).

DISCUSSION

In our study, we examined the early maladaptive schemas of PMDD patients by comparing them with healthy controls. In our results, we determined that the schemas of punitiveness, emotional suppression and vulnerability were higher in the patient group than in the healthy controls. Approval-seeking, pessimism, enmeshment/dependence, and insufficient self-control schema scores were higher in the patient group, although they were not statistically significant. Early schema sub-domain scores of the patients were also associated with some clinical variables.

Early maladaptive schemas are patterns that enable the individual to interpret his/her life during childhood and adolescence, affect self-perception and interpersonal relationships, recur throughout life, and remain silent in mentally healthy individuals (Young, 1990). While defining schema domains, Young emphasized that schema domains can affect many areas of life, such as interpersonal relationships, trust, stability, keeping promises, and cooperation (Young et al., 2005). In fact, it has been shown that schemas affect even feeling happy in individuals without a diagnosed mental illness (Yalçın

et al., 2018). No study has been found in the literature examining the association between PMDD and schema. Since PMDD is included in the main title of depressive disorders in the DSM-5 diagnostic criteria, the association between depressive disorder and schema has been investigated. It has been observed in the literature that the results obtained in studies conducted in this area are contradictory (Özdin et al., 2018; Flink, 2018; Chen et al., 2015; Eynaki & Sadeghi 2021). In a study conducted in our country, pessimism, social isolation, failure, abandonment, imperfection and vulnerability were found to be higher in patients with major depressive disorder than in healthy controls. It was also found in this study that there was a positive correlation between social isolation and emotional deprivation, failure, approval-seeking, dependence, abandonment and defectiveness schemas (Özdin et al., 2018). In a study conducted abroad, it was observed that more schemas were active when comorbid personality disorder was present in patients with depressive disorder. It was reported that EMS approval-seeking sub-scores were significantly higher in the coexistence of depressive disorder and personality disorder (Flink, 2018). Similarly, the severity of depressive disorder was found to be associated with the presence of early maladaptive schemas (Chen, et al., 2015). In another study, an association between abandonment schema and depressive disorder symptom severity was reported (Eynaki&Sadeghi, 2021). Although the association between depressive disorder and EMS reveals contradictory data in the literature, the common conclusion is that the presence of early schemas and the severity of the symptoms of the disease are associated. It is also the presence of schemas in depressive disorder (Özdin et al., 2018; Flink, 2018; Chen et al., 2015; Eynaki & Sadeghi 2021). The results we obtained in the EMS association in PMDD patients, which is under the main title of depressive disorder, were that the schema scores of punitiveness, emotional suppression and vulnerability were higher than those of healthy controls. Approval-seeking, pessimism, enmeshment/dependence, and insufficient self-control schema scores were higher in the patient group, although they were not statistically significant. Since it is the first study in this field, it provides valuable information to the literature. However, the findings we have obtained need to be supported with more studies to be done.

In our results, patients' early schema sub-domain scores were also associated with some clinical variables. In a

study examining the association between depressive disorder and EMS, it was shown that female gender, older age and lower education level were predictors of the severity of depression (Chen et al., 2015). In another study analyzing the association between depressive disorder and schema, it was found that schemas were associated with the severity of depression. In the same study, defectiveness and failure schemas were found to be predictors of depressive disorder (Akbari & Rahbar, 2013). In a slightly older study, it was reported that schemas were effective in the emergence of depressive disorder. In the same study, the role of schemas in both the formation and severity of depressive disorder was mentioned (Halvorsen et al., 2010). According to the clinical variable and schema association we found in our results, it was observed that the emotional suppression schema was higher in the singles. Moreover, it was detected that certain schemas gave higher results in those with higher education levels and those living in the city. Higher standards and approval-seeking schemes were higher in those with post-secondary education. The enmeshment/dependence and resilience schema were higher in the city-dwellers than in the other groups. In our results, no association was found between economic level and EMS. Since it is an area that has not been studied before in the literature, further research should be done to reveal the association between clinical variables and schemas in PMDD.

CONCLUSION

Finally, schema sub-domains in PMDD patients were correlated with almost every sub-domains. This result was evaluated in accordance with the literature. In most of the studies examining the schema association in the field of mental health, schema sub-domains were found to be correlated with each other (Özdin et al., 2018; Flink, 2018; Chen et al., 2015; Eynaki & Sadeghi 2021; Akbari&Rahbar, 2013; Halvorsen et al., 2013). In a study conducted in patients with depressive disorder in our country, social isolation schemas and emotional deprivation, failure, approval-seeking, dependence, abandonment, and defectiveness schemas were found to be positively correlated. The correlation of these schema domains, which are highly related to each other, is both compatible with the literature and an expected situation.

As a result, we found that some schema domains were dominant in PMDD patients, even though there was no other mental disorder. Although some schema domains

did not differ statistically, we also found that they differed from healthy controls. In addition, we found that the schemas were associated to each other and to some clinical variables. In the light of all the results we obtained, it should be considered that schema therapy can also be applied while providing psychological support to PMDD patients. Moreover, further research on this subject should detail the association between PMDD and schemas and investigate the role of schema therapy in treatment.

Limitations: Our study should be evaluated considering some limitations. The first of the limitations is the relatively insufficient number of patients. The differences in ages and education levels between the patient and control groups are other limitations. Moreover, the lack of a scale related to disease severity in the PMDD group can be considered as a limitation. Finally, since 14 schema sub-domains are valid in our country, our study could not be examined in terms of 18 schemas. However, the absence of studies investigating early maladaptive schemas in PMDD patients in the literature and the exclusion of comorbid patients are the strengths of our study.

Ethics Committee Approval: The study was approved by the Local Ethics Committee Non-Invasive Studies of Tokat Gaziosmanpaşa Faculty of Medicine University (date and number of approval: 02.09.2021 / 83116987-655).

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors declare no conflict of interest.

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