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An Investigation of the Relationship Between Peer Relationships and Stuttering Severity in Adolescents with and Without Stuttering

Kekemeliği Olan ve Olmayan Ergenlerde Akran İlişkileri ile Kekemeliğin Şiddeti Arasındaki İlişkinin İncelenmesi

İrem AKPINAR[1], Seçil AYDIN ORAL[2]

[1]Uskudar University, Institute of Health Sciences, Department of Speech and Language Therapy, İstanbul · **irem.akpinar@st.uskudar.edu.tr** · ORCİD > 0009-0005-2274-9797

[2]Uskudar University, Faculty of Health Sciences, Department of Speech and Language Therapy, İstanbul · **secil.aydinoral@uskudar.edu.tr** · ORCİD > 0000-0002-4709-8565

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Sorumlu Yazar/Corresponding Author: İrem AKPINAR

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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN PEER RELATIONSHIPS AND STUTTERING SEVERITY IN ADOLESCENTS WITH AND WITHOUT STUTTERING

ABSTRACT

Aim: *This study aimed to compare peer relationships between adolescents who stutter (AWS) and adolescents who do not stutter (AWNS) and to investigate the relationship between stuttering severity and peer relationships among adolescents who stutter.*

Method: *A total of 83 adolescents aged 13–15 years, comprising 41 adolescents who stutter (AWS) and 42 adolescents who do not stutter (AWNS), participated in the study. Stuttering severity was assessed using the Stuttering Severity Instrument-4-TR (SSI-4-TR), while peer relationships were evaluated using the Peer Relations Questionnaire-TR (PRQ-TR).*

Results: *The adolescents who stutter group scored significantly lower than the AWNS group on the "aid" subscale. A marginally significant difference was found between the groups in the total peer relations score. No significant differences were observed in the companionship, conflict, protection, or intimacy subscales. Additionally, no significant relationship was found between stuttering severity and peer relationships among adolescents who stutter.*

Conclusion and Recommendations: *Adolescents who stutter experience difficulties in seeking and receiving help from their peers, while demonstrating similarities to their fluent peers in other dimensions of peer relationships. The lack of a predictive relationship between stuttering severity and peer relationships highlights the importance of psychosocial factors beyond fluency in shaping social outcomes.*

Keywords: Adolescence, Peer Relationships, Social Support, Stuttering, Stuttering Severity.

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KEKEMELİĞİ OLAN VE OLMAYAN ERGENLERDE AKRAN İLİŞKİLERİ İLE KEKEMELİĞİN ŞİDDETİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

ÖZ

Amaç: *Bu çalışma, kekemeliği olan ergenler ile kekemeliği olmayan ergenlerin akran ilişkilerini karşılaştırmayı ve kekemeliği olan ergenlerde kekemelik şiddeti ile akran ilişkileri arasındaki ilişkiyi incelemeyi amaçlamıştır.*

Yöntem: *Çalışmaya 13-15 yaş aralığında 41 kekemeliği olan ve 42 kekemeliği olmayan (toplam 83) ergen katılmıştır. Kekemelik şiddeti Kekemelik Şiddet Envanteri-4-TR (SSI-4-TR) ile, akran ilişkileri ise Akran İlişkileri Ölçeği-TR (PRQ-TR) ile değerlendirilmiştir.*

Bulgular: *Kekemeliği olan grup, kekemeliği olmayan gruba kıyasla "yardım" alt ölçeğinde anlamlı derecede daha düşük puan almıştır. Genel akran ilişkileri puanında gruplar arasında sınırda anlamlı bir fark bulunmuştur. Arkadaşlık, çatışma, korunma ve yakınlık alt boyutlarında anlamlı farklılık gözlenmemiştir. Ayrıca, kekemeliği olan ergenlerde kekemelik şiddeti ile akran ilişkileri arasında anlamlı bir ilişki bulunmamıştır.*

Sonuç ve Öneriler: *Kekemeliği olan ergenler, akranlarından yardım alma konusunda zorluk yaşarken, diğer akran ilişkisi boyutlarında akıcı konuşan akranlarına benzer özellikler göstermektedir. Kekemelik şiddetinin akran ilişkilerini yordamaması, sosyal sonuçlar açısından akıcılık dışındaki psikososyal faktörlerin önemini vurgulamaktadır.*

Anahtar Kelimeler: Akran İlişkileri, Ergenlik, Kekemelik, Kekemelik Şiddeti, Sosyal Destek.

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INTRODUCTION

Stuttering is defined as "a complex disorder characterized by significant disruptions in normal speech fluency" (Guitar, 2014). Aside from its effects on speech fluency, stuttering is also linked with cognitive and emotional consequences that impede communication processes and self-image, which in turn creates an environment where it is hard to communicate with your surroundings (Werle, 2021). In addition, stuttering is also linked with social developmental challenges in children with stuttering, which start at age 3, followed by challenges in developing

successful peer relationships by age 5. By age 11, challenges in coping with peer relationship pressures c evident (McAllister, 2016). Thus, in light of the fact that adolescence is considered a critical period in peer relationship development, it is therefore imperative to examine social dynamics in this context.

Peer relationships are an important factor in mental health, social and emotional development, and youth identity construction, particularly as children transition into adolescence. During this time, youth in search of constructing their own identity often look towards their peers for direction and guidance, whether in pursuit of approval or in an effort to prove themselves. This leads to both positive and negative outcomes (Steinberg & Morris, 2001). On average, good peer relationships are associated with academic, emotional, and psychological benefits, whereas bad peer relationships are associated with loneliness, social isolation, and internalized problems (Waldrip et al., 2008). For adolescents who stutter may face more significant social challenges due to their stuttering and in terms of peer relationships is not always easy. McAllister (2016) indicates that the major social problems experienced by people who stutter result from problems in communication. Blood and Blood (2016) similarly highlighted that adverse social experiences affect the persistence and maintenance of stuttering; particularly, negative stereotypes linked to stuttering can create stigma that hinders individuals who stutter from cultivating and sustaining healthy peer networks and social competencies. Moreover, Davis et al. (2002) found that children who stutter are perceived as shy or withdrawn, which negatively impacts peer acceptance. These challenges become even more pronounced During adolescence, a time when social relationships become increasingly complex. Research Has indicated that adolescents who stutter have a greater risk of peer rejection, teasing, bullying, and social exclusion than their AWNS (Blood & Blood, 2004; Langevin et al., 2009). Such negative social experiences may contribute to avoidance of communication, social participation in class, and feelings of social competence for adolescents who stutter (Adriaensens et al., 2015; McAllister, 2016). Studies conducted with children who stutter have shown that these children face a higher risk of rejection and bullying by their classmates (Blood & Blood, 2004); in addition, negative peer reactions lead to social exclusion (Davis et al., 2002), peers who speak fluently are more popular than those who stutter (Berchiatti et al., 2020), and children who stutter are more frequently the subject of teasing by their peers (Langevin et al., 2009).

In addition to these external experiences, the perception of their own stuttering by adolescents who stutter is also very important. Students who view their stuttering as more severe exhibit more adverse outcomes in domains such as self-esteem, social acceptance, and the capacity to cultivate intimate friendships (Adriaensens et al., 2015). Additionally, a negative correlation has been identified between the frequency of stuttering and perceived social acceptance (Hertsberg & Zebrowski, 2016). Furthermore, the perceptions of peers who do not stutter are influenced by

the frequency of stuttering. In a study examining how the frequency of stuttering affects perceptions among adolescents who do not stutter (AWNS), the findings indicated that as the frequency and severity of stuttering increase, their peers who stutter are likely to face greater social difficulties and a higher possibility of being teased or bullied. More broadly, peer relationships cannot be viewed in a one-dimensional manner; research has also shown that children aged 9–13 perceive the characteristics of a person who stutters negatively, children aged 11–13 prefer to be friends with a fluent speaker rather than a non-fluent one (Franck et al., 2003).

This is part of a large body of research across the world. But it's also important to think about the cultural setting in which these peer interactions are happening. Kara & Karamete (2018) discovered that children who stutter are more susceptible to bullying by their peers in Turkey. More recent research by Tonkaz et al. (2025) and Karahan Tığrak et al. (2021) discovered that children and adolescents in Turkey who stutter are facing significant peer relation challenges and these children are more susceptible to bullying by their peers, which correlates with diminished self-esteem, anxiety, depression, social rejection, and interpersonal difficulties. It's also important to note that Karahan Tığrak et al. (2021) used both kids and teens in their small group of participants, which may have made some of their results less clear. More positive findings came from Erim & Uysal (2023), which found that the attitude of Turkish peers towards children who stutter improves with age.

Aside from these methodological considerations, no previous study has examined the relationship betwee objectively defined stuttering severity and the multifaceted nature of peer relationships in Turkish-speaking stuttering adolescents. To our knowledge, the present study addresses this issue for the first time in the scientific literature. The main purpose of our investigation was to examine and compare peer relationships in adolescents who stutter and AWNS aged 13-15 years, in five domains of relationships—companionship, conflict,help, protection, and intimacy—and examine the relationship between stuttering severityand peer relationships in adolescents who stutter to achieve this aim, the following research questions were addressed:

1. Do adolescents who stutter differ significantly from AWNS on the total score and subscale scores (companionship, conflict, aid, protection, intimacy) of the Peer Relations Questionnaire (PRQ)?

2. Among adolescents who stutter, is there a significant association between stuttering severity (SSI-4-TR scores) and the total score and subscale scores of the PRQ?

METHOD

Research Design and Time: This study employed a quantitative, comparative, and correlational research design. Data collection was conducted following ethical approval obtained in August 2024 and was completed in 2024–2025.

Population/Sample/Study Group: The study group consisted of 41 adolescents who stutter (AWS) and 42 adolescents who do not stutter, aged 13–15 years, residing in Konya, Turkey. The AWS group comprised adolescents who had received a stuttering diagnosis from a speech-language therapist, with or without active therapy. Inclusion criteria for the AWS group were: voluntary participation, age between 13–15 years, Turkish as the native language, literacy skills, and absence of any additional language, speech, cognitive, hearing, physical, or neurological disorder beyond stuttering. The AWNS group was recruited via social media and was required to meet the same criteria, with the exception that participants had no history of any speech, language, cognitive, hearing, physical, or neurological disorder. The sample size was determined through a priori power analysis.

Data Collection Instruments: Three instruments were used. A Personal Information Form, developed by the researcher, collected sociodemographic data including age, gender, and extracurricular activity participation. Stuttering severity was assessed using the Stuttering Severity Instrument-4-TR (SSI-4-TR; Riley, 2009; Turkish adaptation: Mutlu et al., 2014), which evaluates stuttering frequency, duration, secondary behaviors, and speech naturalness to yield a composite severity score categorized as very mild, mild, moderate, severe, or very severe. Peer relationships were assessed using the Peer Relations Questionnaire-TR (PRQ-TR; Bukowski et al., 1994; Turkish adaptation: Atik et al., 2014), a 22-item scale comprising five subscales: companionship, conflict, aid, protection, and intimacy. Items are rated on a 1–5 Likert scale, with higher scores reflecting better peer relationship quality. Internal consistency coefficients (Cronbach's α) for the full scale and subscales ranged from .58 to .86.

Data Collection Process: Data collection commenced after receiving ethical approval from the Üsküdar University Non-Interventional Ethics Committee. Adolescents who stutter were reached through speech-language therapists who identified eligible participants; following parental consent, the researcher explained the study's purpose and procedure to families. AWNS participants and their parents were contacted via a social media announcement; those who met the inclusion criteria and provided informed consent were enrolled. All participants completed the Personal Information Form and the PRQ-TR. For the AWS group, video recordings of conversational speech and reading tasks were obtained, transcribed, and scored using the SSI-4-TR. Interrater reliability was assessed for 15% of SSI-

4-TR evaluations by an independent speech-language therapist, yielding a Cohen's Kappa of 1.000. Assessment sessions lasted approximately 40 minutes.

Data Analysis: SPSS software version 25.0 was utilized for the study. The sample was described by descriptive statistics such as mean, SD, and frequency. The skewness and kurtosis values within ±3 were assumed to be normally distributed. Independent samples t-tests, the Mann-Whitney U test, and Spearman/Pearson correlations were utilized to examine the differences between the groups and the association between the variables and how they were related to each other. The level of significance was set at $p<.05$ for the study. The effect sizes (Cohen's d and r) were recorded accordingly.

Ethics: The Uskudar University Non-Interventional Ethics Committee (29/08/2024, 61351342/020-333) gave their ethical approval, following the Declaration of Helsinki (2013).

Limitations of the Study: Limitations of this study should be acknowledged. First, the relatively small sample size (N = 83) may limit the generalizability of the findings to the broader population of Turkish-speaking adolescents who stutter. Second, the cross-sectional design of the study precludes causal inferences and does not allow for an examination of how peer relationships may change over time in relation to stuttering. Third, a gender imbalance existed between the two groups, with males significantly overrepresented in the AWS group (73.2%), which is consistent with the well-established epidemiological pattern in stuttering; however, this imbalance may have influenced the results, particularly on the aid subscale, given documented gender differences in help-seeking behaviors and peer relationship dynamics during adolescence. Fourth, peer relationships were assessed solely through self-report measures, which are susceptible to social desirability bias and may not fully capture the complexity of social experiences as perceived by peers or teachers. Future studies should incorporate multiple informants, such as peer nominations or teacher ratings, to provide a more comprehensive and ecologically valid picture of peer relationships. Fifth, the study examined only sociodemographic variables in relation to peer relationship scores; other potentially relevant factors — such as self-perception of stuttering, anxiety, coping styles, and social competence — were not included. Incorporating these psychosocial variables in future research would offer a more nuanced understanding of the social outcomes associated with stuttering in adolescence.

RESULTS

Descriptive Findings

The final sample consisted of 41 adolescents who stutter (30 males, 11 females) and 42 AWNS (21 males, 20 females), ranging in age from 13 to 15 years old (M = 13.9, SD = .7). Both groups had a high rate of participation in extracurricular activities, with the adolescents who stutter group reporting 75.6% and the AWN group reporting 83.3%. The range and mean of stuttering severity for the adolescents who stutter group were significant, covering all levels of stuttering severity (M SSI-4-TR = 19.58, SD = 8.41). See Table 1 for results.

Table 1. Demographic characteristics and group comparisons of participants

		AWS (n=41)	AWNS (n=42)	Total (N=83)	Test	p
Age (years)	13	11 (%26.8)	14 (%33.3)	25 (%30.1)	$\chi^2 = 0.675$	.713
	14	17 (%41.5)	14 (%33.3)	31 (%37.3)		
	15	13 (%31.7)	14 (%33.3)	27 (%32.5)		
	M ± SD	**14.05 ± 0.76**	**14.00 ± 0.82**	**14.02 ± 0.79**		
Gender	Boys	30 (%73.2)	21 (%50.0)	51 (%61.4)	$\chi^2 = 4.702$	.030*
	Girls	11 (%26.8)	21 (%50.0)	32 (%38.6)		
Extracurricular Participation	Yes	31 (%75.6)	35 (%83.3)	66 (%79.5)	$\chi^2 = 0.760$	.383
	No	10 (%24.4)	7 (%16.7)	17 (%20.5)		
Stuttering Severity	Very Mild	7 (%17.1)	N/A	7 (%17.1)		
	Mild	14 (%34.1)	N/A	14 (%34.1)		
	Moderate	12 (%29.3)	N/A	12 (%29.3)		
	Severe	7 (%17.1)	N/A	7 (%17.1)		
	Very Severe	1 (%2.4)	N/A	1 (%2.4)		
	M ± SD	**2.54 ± 1.07**	**N/A**			
Stuttering Severity Score (SSI-4-TR)	M ± SD	19.58 ± 8.41	**N/A**	**19.58 ± 8.41**		

AWS= Adolescents who stutter; AWNS= Adolescents who do not stutter; N/A= non-applicable.
*p < .05

Peer Relations Comparison

No significant differences were observed between the two groups on the companionship, conflict, protection, or intimacy subscales. A significant group difference emerged on the aid subscale, with the AWNS group reporting higher scores than the adolescents who stutter group (z= -2.601, p=.009). A marginal trend was observed for the overall PRQ-TR total score, suggesting that adolescents who stutter reported poorer peer relations compared to AWNS (t= -1.991, p= .05). See Table 2 for results.

Table 2. Difference test of PRQ-TR scores between AWS and AWNS.

	AWS	AWNS		
	M (SD)	**M (SD)**	**Test Value**	**p**
Companionship	13.27 ± 3.67	13.88 ± 3.39	-0.790[t]	.432
Conflict	14.15 ± 3.68	15.45 ± 3.44	-1.669[t]	.099
Aid	20.54 ± 4.22	22.40 ± 3.20	**-2.601[z]**	**.009***
Protection	14.56 ± 3.03	15.12 ± 3.26	-.808 [t]	.422
Intimacy	20.07 ± 4.30	21.31 ± 3.73	-1.399 [t]	.166
PRQ-TR-Total	82.59 ± 13.46	88.17 ± 12.05	-1.991 [t]	**.05***

(AWS: Adolescents who stutter, AWNS: Adolescents who do not stutter, M: Mean, SD: Standard Deviation, $p < 0.05$)

Correlation of Peer Relations and Stuttering Severity

No significant correlations were found between stuttering severity and any of the PRQ-TR subscales or the total score. The comprehensive correlation analysis results are presented in Table 3.

Table 3. Correlations of scores of PRQ-TR and SSI-4-TR severity.

		SSI-4-TR Score	Companionship	Conflict	Aid	Protection	Intimacy	PRQ-TR-Total
SSI-4-TR score	r	1						
	p							
Companionship	r	-.042	1					
	p	.792						
Conflict	r	.200	.150	1				
	p	.209	.348					
Aid	r	-.083	.370*	.397*	1			
	p	.605	.017	.010				
Protection	r	-.107	.677*	.253	.491*	1		
	p	.507	.000	.111	.001			
Intimacy	r	-.120	.452*	-.004	.396*	.546*	1	
	p	.455	.003	.981	.010	.000		
PRQ-TR-Total	r	-.019	.721*	.529*	.687*	.813	.701*	1
	p	.905	.000	.000	.000	.000	.000	

(*p <.05)

DISCUSSION

The adolescents who stutter sample consisted mainly of males (73.2%). The AWNS, group was more balanced in terms of gender. This is consistent with common knowledge that stuttering is more common in men than women. In fact, the ratio of men to women has been estimated to be between 2:1 and 5:1 in clinical and population studies (Yairi & Ambrose, 2013). The gender imbalance between the two groups may have influenced the outcomes. Research indicates that gender differences exist in adolescent peer relationships, particularly in the contexts of seeking assistance, conflict resolution, and the formation of intimate connections (Rose & Rudolph, 2006). Therefore, the differences observed in the Aid subscale could be due to gender differences in socialization in addition to stuttering.

The study found that adolescents who stutter face difficulties when asking for and receiving help from their peers, as shown in the lower scores on the Aid

subscale, but other aspects of their peer relations, like companionship, intimacy, and protection, tend to be the same as those of their AWNS. This could be due to the fact that adolescents who stutter are not willing to open up to others about their difficulties, as they fear being stigmatized or being a burden to others. These findings are consistent with previous studies (Blood & Blood, 2016; Davis et al. 2002), showing a cross-cultural trend that asking for help is a difficulty for AWS. Notably, no group differences emerged on the companionship, conflict, protection, or intimacy subscales. This suggests a complex picture in which adolescents who stutter may have difficulty asking for and receiving help, yet still share with others, feel close to others, and deal with conflicts with peers in a way similar to their fluent peers. As might be expected from the study, the Aid subscale emerged as a significant group difference, suggesting that adolescents who stutter report significantly less help and support from peers.

Nevertheless, it is important to note that results obtained for the Protection dimensionshould be viewed cautiously. In the Turkish version of the PRQ (Atik et al., 2014), the internalconsistency for this dimension was found to be moderate (.58), which might limit the accuracyof group differences in this dimension.

Contrary to previous research (Adriaensens et al. 2015; Hertsberg& Zebrowski, 2016),severity of stuttering was not a predictor of peer relation scores, which supports the idea thatself-view, hardiness, and how others view you are more important than how well you speak. Inother words, the severity of the stuttering does not necessarily predict how well you get alongwith others; a person with severe stuttering can be a very socially skilled person, and a personwith mild stuttering can still be having significant social problems.

The cultural emphasis placed on group unity and mutual support in Turkey may shedlight on the continuation of companionship and intimacy in adolescents who stutter, even as they face challenges help-seeking behaviors. Adolescents who stutter are often part of their peergroup; however, they may not ask for support due to fear of stigma and fear of imposing on others (Blood & Blood, 2016).

Previous studies emphasize that interventions should not only focus on fluency but also on seeking support and educating peers, which may help alleviate social difficulties for individuals who stutter (Evans et al., 2008; Kathard et al., 2014). For example, adolescents who stutter can be encouraged to seek support, while peers can be guided to provide greater encouragement. The current study indicated that adolescents who stutter participating in extracurricular activities exhibited markedly higher overall peer relation scores than those not engaged in such activities. This finding indicates that extracurricular activities may serve as a protective factor in the social lives of adolescents who stutter by offering opportunities for casual interactions devoid of communicative pressure. Both

groups had a high rate of participation in people who took part in extracurricular activities (75.6% for AWS and 83.3% for AWNS). This could help people who stutter fit in socially (Evans et al., 2008).

CONCLUSION AND RECOMMENDATIONS

In summary, adolescents who stutter appear to have more difficulties receiving assistance and support from peers compared to their fluent peers. However, adolescents who stutter appear to have relationships with peers similar to those of adolescents who fluently speak in some ways. The lack of a relationship between stuttering severity and relationships with peers underscores the need to provide psychosocial interventions and school-based interventions that promote social and emotional well-being rather than focusing solely on fluency. Given that adolescents who stutter demonstrated specific difficulties in the aid subscale, speech-language therapists are encouraged to address peer support and help-seeking skills within the therapeutic process (e.g., through structured role-playing), and to promote extracurricular involvement, which was also associated with higher peer relationship scores in the present study. Future studies need to use mixed-method approaches to better understand social development in adolescents who stutter. Limitations and Recommendations The cross-sectional design, small sample size, and gender imbalance in the adolescents who stutter. sample of this study constrain the generalizability of the findings; nevertheless, the overrepresentation of males in the adolescents who stutter group is consistent with the well-established epidemiological pattern in stuttering, whereby stuttering is approximately four times more prevalent in males than females, a ratio that becomes more pronounced with age (Bloodstein, 1993; Peters & Turner, 2013). Moreover, the use of self-report methods to assess relationships with peers may lead to social desirability bias, which may affect the sincerity of self-reported experiences. Future studies need to use multiple informants, such as peer or teacher ratings, to provide a more comprehensive understanding of relationships.

APPLICATION/IMPLICATIONS OF THE RESULTS IN PRACTICE

The findings of this study have several practical implications for speech-language therapists, school counselors, and educators working with adolescents who stutter.

Since adolescents who stutter scored significantly lower on the aid subscale, therapeutic interventions should explicitly target help-seeking behaviors. Speech-language therapists are encouraged to incorporate structured role-playing activities into the therapeutic process to practice requesting assistance from peers, as this may help reduce the fear of stigma and the reluctance to impose on others that appears to underlie the observed difficulties.

The absence of a significant relationship between stuttering severity and peer relationship scores highlights that psychosocial factors beyond fluency play a central role in shaping social outcomes. Therefore, clinicians should address self-perception, stigma awareness, and social confidence as core components of intervention, rather than focusing solely on fluency improvement. This is particularly relevant given that even adolescents with mild stuttering may experience significant social difficulties, while those with severe stuttering may maintain satisfactory peer relationships.

School-based peer education programs represent another important avenue for intervention. Educators and school counselors can guide fluent peers to respond more empathetically and supportively toward classmates who stutter, which may improve help-seeking dynamics within classroom settings and reduce social exclusion.

Finally, extracurricular participation was associated with higher peer relationship scores in the present study, suggesting that it may serve as a protective factor in the social lives of adolescents who stutter. School professionals, speech-language therapists, and families should therefore actively encourage and support the involvement of adolescents who stutter in extracurricular activities, as these settings provide lower-pressure social opportunities that may facilitate peer bonding without the demands of formal communicative contexts.

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The authors declare that there are no conflicts of interest to report.

Author Contribution:

Idea: İA (%50), SAO (%50)

Concept: İA (%50), SAO (%50)

Design: İA (%50), SAO (%50)

Literature Review: İA (%50), SAO (%50)

Data Collection: İA (%100)

Data Analysis/Processing: İA (%100)

Writing the Manuscript: İA (%50), SAO (%50)

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