Mevlana Tıp Bilimleri Dergisi
Mevlana Medical Sciences
eISSN:2757-976X

ARAŞTIRMA MAKALESİ/RESEARCH ARTICLE DOI:http:/dx.doi.org/10.56752/Mevmedsci.2025.82
Mev Med Sci, 2025; 5(1): 18-21

Educating Kindergarten and Elementary School Children About Vitamin D and Reflecting on Families

Anaokulu ve İlkokul Dönemi Çocuklarının D Vitamini Konusunda Bilgilendirilmesi ve Ailelere Yansıması

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Makale Tarihleri/Article Dates:
Geliş Tarihi/Received: 13 January 2025
Kabul Tarihi/Accepted: 13 February 2025
Yayın Tarihi/Published Online: 21 April 2025

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Açıklama/Disclosure: Yazarların hiçbiri, bu makalede bahsedilen herhangi bir ürün, aygıt veya ilaç ile ilgili maddi çıkar ilişkisine sahip değildir. Araştırma, herhangi bir dış organizasyon tarafından desteklenmedi. Yazarlar çalışmanın birincil verilerine tam erişim izni vermek ve derginin talep ettiği takdirde verileri incelemesine izin vermeyi kabul etmektedirler.

ÖZET

Amaç: D vitamini eksikliği ve yetersizliği tüm toplumu etkileyen önemli bir sağlık sorunu olarak güncelliğini korumaktadır. Çalışmamızda anaokulu ve ilkokul yaş grubundaki çocuklara tiyatro gösterisi yapılarak D vitamini farkındalığının artırılması amaçlandı.
Yöntemler: Şubat 2024-Mart 2024 tarihleri arasında, Konya ilinde özel bir anaokulu ve ilköğretim kurumunda D vitamini bilgi düzeyinin artırılması amacıyla tiyatro gösterisi gerçekleştirildi. Tiyatro gösterisine katılan öğrencilerin ebeveynlerine tiyatro öncesi ve sonrası belirtilen anket soruları sorularak bilgi düzeyleri incelendi.
Bulgular: Çalışmamıza 59 ebeveyn dahil edildi. Çocuklardan 48 (%81,3)'i ebeveynlerine tiyatro gösterisi hakkında bilgi vermişti. Tiyatro gösterisi öncesi 44 (%74,5) ebeveyn D vitamini hakkında bilgi sahibi olduğunu beyan etti. Tiyatro sonrası 12 ebeveyn D vitamini takviyesi kullanmayı düşünmekteydi. D vitamini hakkında yeterli bilgi düzeyine sahip olmadığını düşünen 16 ebeveynden 14'ü tiyatro gösterisi sonrası D vitamini hakkında bilgi sahibi olduğunu beyan etti.
Sonuç: D vitamini kullanımının yaygınlaştırılması ve profilaksi kullanımının özendirilmesiyle ilgili yapılacak çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: D vitamini, profilaksi, pediatri, tiyatro gösterisi

ABSTRACT

Introduction: Vitamin D deficiency and insufficiency remains an important health problem affecting the whole society. In our study, we aimed to increase vitamin D awareness by performing a drama show for kindergarten and primary school children.
Materials and Methods: Between February 2024 and March 2024, a theater performance was held in a private kindergarten and primary school in Konya province to increase the knowledge level of vitamin D. The parents of the students who participated in the drama performance were asked the specified questionnaire questions before and after the drama performance and their knowledge levels were examined.
Results: 59 parents were included in the study. Forty-eight (81.3%) of the children had informed their parents about the drama show. Before the drama, 44 (74.5%) parents reported having information about vitamin D. After the drama, 12 parents were considering using vitamin D supplements. Of the 16 parents who did not think they had enough knowledge about vitamin D, 14 of them said they had knowledge about vitamin D after the drama.
Conclusion: There is a need for further studies on the widespread use of vitamin D and encouraging the use of prophylaxis.

Key words: Vitamin D, prophylaxis, pediatrics, drama

Atıf yapmak için/ Cite this article as: Metin Akcan O, Ergen Dibeklioğlu S, Tokur ZH, Koc M, Ercan NB, Kaya MI, Habibulla N, Celik A, Kurban MH, Esvad L, Naftullayev A, Ersöz T, Ghanizada A, Genceli M. Educating Kindergarten and Elementary School Children About Vitamin D and Reflecting on Families. Mev Med Sci. 2025; 5(1): 18-21

INTRODUCTION

In Turkey, vitamin D deficiency and insufficiency remain an important health problem affecting the entire population, especially infants, children, pregnant women, adolescents and the elderly. The main source of vitamin D is synthesized in the skin by exposure to sunlight, and a much smaller amount is obtained from diet and vitamin D supplements, which is far below the daily requirement (1). Today, children spend more time in front of television and computers and are exposed to limited sunlight due to inadequate playgrounds, air pollution, use of high sun protection sunscreens to prevent skin cancer, and traditional covered clothing. As a result, vitamin D synthesis from the skin is reduced. Although Turkey is a sunny country, these factors cause vitamin D deficiency to be common in our country (2, 3). Vitamin D deficiency and disorders in its metabolism can lead to serious health problems in childhood, especially rickets, which is characterized by soft and weakened bones due to insufficient mineralization of newly formed bone tissue, and in recent years, the effects of vitamin D on quite different systems such as the central nervous system, gastrointestinal, cardiovascular and immune systems have been described in addition to its classical effects on the musculoskeletal system (3-5).

In Turkey, a nationwide vitamin D supplementation campaign was initiated in 2005 to reduce the incidence of rickets in infants and young children, and 400 IU/day of vitamin D3 was given free of charge to all newborns. It was observed that the prevalence of rickets decreased from 6% to 0.1% in a few years (6). Studies on the prevalence of vitamin D deficiency and insufficiency, especially in children older than 3 years, are lacking in Turkey (7).

It was planned to increase the knowledge level of preschool and elementary school children about vitamin D by performing an age-appropriate drama show about vitamin D. Furthermore, the parents of the children were interviewed before and after the drama show to determine and increase the parents' knowledge level about vitamin D and to show that children transfer information to their parents from activities such as the drama show at school.

MATERIAL-METHODS

This study was carried out within the framework of the social responsibility project of intern doctors. Between February 2024 and March 2024, a drama show was performed in a private kindergarten and primary school in Konya province to increase the level of vitamin D knowledge. The drama, which included information about vitamin D within the scope of literature information and at an age-appropriate level, was performed by intern doctors. Permission for the drama performance was obtained from the school administration. The study was conducted by asking the parents of the students who participated in the drama to complete the specified questionnaire before and after the drama. Our study was prospective.

A total of 59 parents participated in the study. Parents who were missing in the pre and post questionnaires or who did not attend the theater performance were excluded from the study.

RESULTS

Of the parents included in our study, 36 (61%) had children between 48-60 months and 23 (39%) had children between 61-84 months. Before the drama performance, 44 (74.5%) parents reported having information about vitamin D. Between 10:00 and 15:00, 29 (49.1%) parents took their children outside. When the duration of vitamin D use by the parents was evaluated, 32 (54.3%) of them were still using vitamin D. Fifteen (25.4%) of the parents had used vitamin D up to 1-2 years of age, 7 (11.9%) up to 6 months of age, and 5 (8.4%) had never given vitamin D. Regarding the dosage, 21 parents used 400 units, 16 parents used 600 units, and 4 parents used 1000 units of vitamin D. Regarding the ways in which vitamin D could be obtained, 4 parents chose sunlight only, 2 chose vitamin supplements, and 51 chose both. There were 3 parents who said that vitamin D deficiency caused only bone and joint disease and 56 parents who said that it caused both bone and joint disease and decreased immunity. The responses to the post-performance survey questions are shown in Table 1.

Table 1. Distribution of Patient Characteristics by Gender

	Yes n, (%)	**No n (%)**
Has your child told you about the drama?	48 (81,3)	11 (18,7)
If yes to the previous question, has your child told you about vitamin D?	43 (89,5)	5 (10,5)
Did you have any knowledge about vitamin D before the drama?	43 (72,8)	16 (27,2)
If you answered no to the previous question, did you learn anything about vitamin D after you left the drama?	14 (87,5)	2 (12,5)
Did you give your child vitamin D supplements before the drama?	32 (54,2)	27 (45,8)
Will you or do you plan to give your child vitamin D supplements after the drama?	44 (74,5)	15 (25,5)

DISCUSSION

The importance of vitamin D, which is necessary for healthy growth and development, affects many systems, has a regulatory role in metabolism, and has hormone-like activity, is well recognized, and Public Health England recommends 400 IU of vitamin D supplementation daily for children over 1 year of age. Adults and children over 4 years of age are recommended to take 400 IU of vitamin D supplements during the fall and winter months, and people with limited sun exposure or dark skin should take supplements throughout the year (8). The clinical practice guideline of the Endocrine Society of the United States of America emphasizes that 400-1000 IU per day for children younger than 1 year, 600-1000 IU per day for children aged 1 year and older, and 1500-2000 IU per day for adults aged 19 years and older are required to maintain 25-hydroxyvitamin D levels above the optimal level of 30 ng/mL (9). In our study, we aimed to popularize the use of vitamin D, which is so important. We helped 12 parents who had not previously given vitamin D to think positively about giving vitamin D supplements. In addition, 14 out of 16 parents who previously said they did not know about vitamin D said they knew after the program.

The most common causes of rickets, especially in developing countries, are vitamin D, calcium, and phosphorus deficiencies. The development of rickets in children can be prevented by vitamin D prophylaxis in pregnant and lactating mothers and/or infants (10). The prevalence of rickets in children aged 0-3 years in different regions of Turkey has varied from 1.67% to 19.0% in the last 40 years. In another study conducted in Ankara in 2002-2003, the prevalence was reported to be 6.8% (11). The common finding in all these studies was that children with rickets had inadequate vitamin D intake and were not receiving vitamin D supplementation (12). Although randomized controlled trials investigating the efficacy of vitamin D in preventing acute respiratory tract infections have yielded mixed results, vitamin D supplementation has been reported to be safe and generally protective against acute respiratory tract infections (13). Vitamin D levels in infants are known to be correlated with maternal levels. Maternal vitamin D deficiency may increase neonatal susceptibility to infection (14). It is also known that vitamin D deficiency or insufficiency increases the frequency of attacks in diseases such as multiple sclerosis and migraine. In a study of 171 patients diagnosed with migraine, 86.5% were found to be deficient or insufficient in 25-hydroxyvitamin D (15). In our study, we believe that increasing the level of knowledge about vitamin D in both children and their parents will increase its use in this age group and prevent clinical conditions that may result from vitamin D deficiency and insufficiency.

Studies suggest that a more effective strategy for the prevention of rickets is needed in Turkey. In fact, the recommendation of 400 IU/day of vitamin D for all infants up to 1 year of age is a routine practice in Turkey and has been an important part of the curriculum for medical students and pediatric residents for at least 40 years. However, the prevalence of rickets among infants in Turkey, especially in the migrant population, highlights the shortcomings of this strategy. A recent survey of primary care physicians showed that only 85% of pediatricians and 54% of general practitioners recommend vitamin D in the first month of life. More importantly, it is known that the vast majority of parents do not continue vitamin D supplementation until the baby is 12 months old (6). Unfortunately, anti-pharmaceutical movements on social media have played a major role in disrupting vitamin use. We believe that social responsibility projects such as our study should be widely disseminated to popularize vitamin D use in our country.

CONCLUSION

Further studies are needed to promote the use of vitamin D, which plays a role in the regulation of all systems, as well as in bone development and mineralization, and to encourage the use of prophylaxis. We consider that the extension of vitamin D prophylaxis, which is successfully used in the first year of life in our country, to other age groups and risk groups could be beneficial for public health.

Etik Kurul: Our study was approved by the Ethics Committee of Necmettin Erbakan University Faculty of Medicine (Decision No. 2024/4777).

Çıkar Çatışması: Çalışmada herhangi bir çıkar çatışması yoktur.

Finansal Çıkar Çatışması: Çalışmada herhangi bir finansal çıkar çatışması yoktur.

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