



Arařtırma Yöntemleri

Doç Dr. Zeliha Öcek
Halk Saęlığı AD



Öğrenim Hedefleri

Epidemiyolojik arařtırmaların

- Amaçlarının ve kullanım yerlerinin bilinmesi
- Sınıflandırılması



Veri Toplama Tekniğine Göre Araştırmalar

- Gözlemsel
- Deneysel



Nedensellik İlişkilerini İrdelemelerine Göre Araştırmalar

- Tanımlayıcı
- Çözümleyici

Neden-Sonuç İlişkilerinin Belirlenmesi





Zamanla İlişkinine Göre Araştırmalar

- Retrospektif
- Prospektif
- Kesitsel

Zamanla İlişisine Göre Araştırmalar



- Retrospektif

Zamanla İlişisine Göre Araştırmalar

➤ Prospektif



Body-Orr Kohort Çalışması (1937- ...)
Birleşik Krallık, 4999 çocuk

Zamanla İlişisine Göre Araştırmalar

➤ Kesitsel



Uygulandıđı Ortama Gre Arařtırmalar



- Klinik
- Laboratuvar
- Toplum

Uygulandıđı Ortama Gre Arařtırmalar



➤ Klinik

Uygulandıđı Ortama Gre Arařtırmalar



➤ Laboratuvar

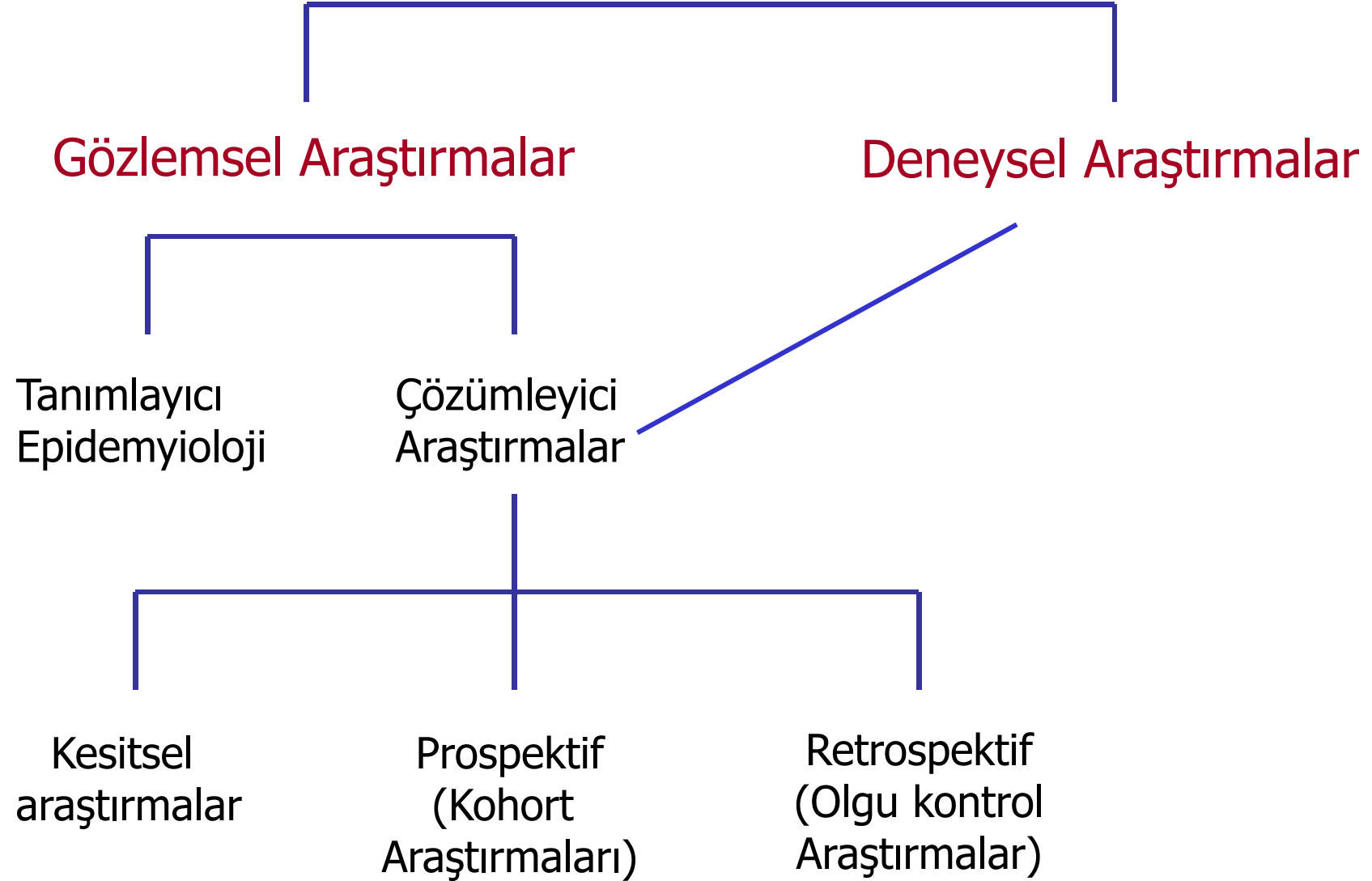


Uygulandığı Ortama Göre Araştırmalar

- Toplum

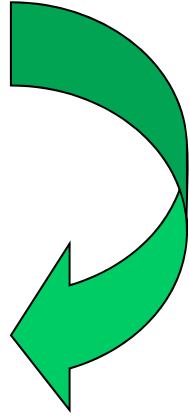


Araştırma Yöntemleri



Zamanla İlişkisi

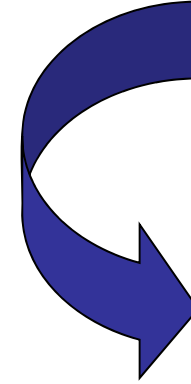
Geriye Dönük



Olgu-kontrol
Neden ← Sonuç

Kesitsel
Neden
~~~~~  
Sonuç

**İleriye Dönük**



**Kohort**  
Neden → Sonuç

**Deneysel**

Neden → Sonuç





# Tanımlayıcı Arařtırmalar

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Doç Dr. Zeliha Öcek  
Halk Saęlığı ABD



# Tanımlayıcı Çalışma Türleri

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## 1. Olgu Sunumları / Olgu Raporları

- Tek bir olgunun/hastanın bilgileri

## 2. Olgu Serileri

- Benzer tanılı bir hasta grubunun bilgileri

Örneğin, seyrek görülen bir kansere yakalanmış bir grup hastada mesleki etkilenim açısından kümelenme

Hipotez kurulması için temel oluştururlar

İstatistiksel bir ilişkinin varlığını test etmede kullanılamazlar

## BRIEF REPORT

### NORMAL PLASMA CHOLESTEROL IN AN 88-YEAR-OLD MAN WHO EATS 25 EGGS A DAY

#### Mechanisms of Adaptation

FRED KERN, JR., M.D.

**D**IETARY cholesterol increases the plasma level of total and low-density lipoprotein (LDL) cholesterol and accelerates the development of atherosclerosis and its complications, but individual responses to a given change in the dietary cholesterol level vary widely.<sup>1-7</sup> Such responses are reproducible to some extent, suggesting genetic as well as physiologic determinants.<sup>8,9</sup> Several genetic determinants have been identified in nonhuman primates.<sup>10-13</sup> The homeostatic and regulatory mechanisms that maintain a relatively constant level of plasma cholesterol despite changes in dietary cholesterol intake include alterations in the efficiency of intestinal absorption and in the rates of cholesterol biosynthesis, LDL-receptor activity, secretion of cholesterol into bile, and hepatic conversion of cholesterol into bile acids, the chief metabolic product of cholesterol.<sup>5,7,14,15</sup>

In humans, these responses to increases in the dietary intake of cholesterol have been investigated for 25 years, primarily by metabolic-balance studies. Balance studies are time consuming and costly, require unusual levels of patient compliance, and are therefore usually limited to small numbers of subjects. In recent years new procedures have been developed that allow almost complete assessment of the regulation of cholesterol metabolism in subjects who are not hospitalized, with a minimum of inconvenience and discomfort. These techniques have not yet been extensively employed.

My colleagues and I have used many of these procedures in studies of the relation of cholesterol-mechanisms to several risk factors for cholesterol gallstones, primarily female sex-steroid hormones and dietary cholesterol levels.<sup>16-18</sup> When we recently learned of an 88-year-old man who ate 25 eggs a day and who maintained a normal plasma cholesterol level, we took advantage of the opportunity to study him in order to learn more about the control of cholesterol metabolism in response to an unusually excessive intake of cholesterol.

#### CASE REPORT

An 88-year-old man who lived in a retirement community complained only of loneliness since his wife's death. He was an articulate, well-educated elderly man, healthy except for an extremely

poor memory without other specific neurologic deficits. He had been given a diagnosis of Alzheimer's disease and was intermittently depressed. His general health had been excellent, without notable symptoms. He had mild constipation. His weight had been constant at 82 to 86 kg (height, 1.87 m). He had no history (according to the patient and his personal physician of 15 years) of heart disease, stroke, or kidney disease except for an episode of mild chest pain three years earlier. The only objective change at that time was transient depression of the ST segments and T waves in the lateral leads on his electrocardiogram. The patient had been treated for angina and had had no recurrence. There was no history of gallstones or of symptoms of biliary tract disease, but no cholecystography or ultrasound examination had been done recently. His physician's records showed numerous serum cholesterol measurements that ranged from 3.88 to 5.18 mmol per liter (150 to 200 mg per deciliter).

The patient had never smoked and never drank excessively. His father died of unknown causes at the age of 40, and his mother died at 76. One sister died at the age of 82, and another was alive at 86; their plasma lipid values were not available.

The patient's poor memory impaired the accuracy of the dietary history, but his consumption of 20 to 30 eggs a day was verified. Although he could not remember the duration of this eating pattern, his physician attested to its presence for 15 years; a friend, for even longer. He always soft-boiled the eggs and ate them throughout the day. He kept a careful record, egg by egg, of the number ingested each day. The nurse at the retirement home confirmed the daily delivery to him of approximately two dozen eggs. A psychiatrist and a clinical psychologist had characterized this unusual eating habit as compulsive behavior, based on complex psychological factors. Efforts to modify the behavior had been unsuccessful. The patient stated, "Eating these eggs ruins my life, but I can't help it."

#### METHODS

The studies were approved by the human subjects committee of the University of Colorado School of Medicine. The patient gave written informed consent.

Plasma total, LDL, and high-density lipoprotein (HDL) cholesterol; triglyceride; and apolipoproteins A-I and B were measured by standard clinical laboratory techniques. The absorption of cholesterol was determined by the isotope-ratio method,<sup>16-18</sup> which requires the simultaneous administration of 2  $\mu$ Ci of [<sup>14</sup>C]cholesterol orally and 2  $\mu$ Ci of [<sup>3</sup>H]cholesterol intravenously. Blood samples are taken 24 and 48 hours later for the measurement of isotope ratios. Sterol synthesis was quantified by measuring the [<sup>14</sup>C]acetate incorporated into sterols by mononuclear cells freshly isolated from 30 ml of blood.<sup>16-18</sup> Bile-acid kinetics were determined by a stable-isotope method<sup>19</sup> that employs plasma bile acids. [<sup>13</sup>C]cholic acid and [<sup>13</sup>C]chenodeoxycholic acid, the two primary bile acids, were given by mouth, and blood was drawn daily for five days for the measurement of molar ratios of labeled to unlabeled bile acids by gas chromatography-mass spectroscopy. The fractional turnover rate, pool size, and rate of synthesis of each bile acid were calculated.<sup>19</sup>

The data obtained were compared with those obtained in a study currently in progress. Eleven volunteers, 10 women and 1 man, ranging in age from 30 to 60 years, were studied similarly while following their usual diet and again after 16 to 18 days during which their diets were supplemented with five eggs a day, representing approximately 2590  $\mu$ mol (1000 mg) of additional cholesterol. The mean daily dietary cholesterol intake was 567  $\mu$ mol (219 mg) during the low-cholesterol period and 2995  $\mu$ mol (1156 mg) during the high-cholesterol period. All the subjects were healthy, except that eight had asymptomatic radiolucent gallstones.

The New England  
Journal of Medicine



# Olgu Serileri

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- Semptom ve bulguların tanımlanmasını, olgu tanımının yapılabilmesini sağlar
- Hastalığın spektrumunun ve doğal öyküsünün daha iyi anlaşılmasını sağlar
- Klinik eğitim açısından yararlıdır

## CASE REPORT

Year : 2013 | Volume : 3 | Issue : 1 | Page : 89-92

### Ectopic tooth in maxillary sinus: Case series

Shandilya Ramanojam<sup>1</sup>, Rajshekhar Halli<sup>1</sup>, Manjula Hebbale<sup>2</sup>, Smita Bhardwaj<sup>3</sup>

<sup>1</sup> Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth University Dental College and Hospital, Pune, Maharashtra, India  
<sup>2</sup> Department of Oral Medicine and Radiology, Bharati Vidyapeeth University Dental College and Hospital, Pune, Maharashtra, India  
<sup>3</sup> Department of Oral Medicine and Radiology, M.A. Rangoonwala Dental College and Hospital, Pune, Maharashtra, India

**Correspondence Address:**  
Shandilya Ramanojam  
Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth University Dental College and Hospital, Pune 411 043, Maharashtra India  
[Login to access the email ID](#)

DOI: 10.4103/2231-0746.110075

PMID: 23662268

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Ectopic eruption of a tooth within the dentate region of the jaws is often noticed in clinical practice and is well documented in the literature. But the ectopic eruption into the non dentate region is rare and scantily documented. The maxillary sinus is one such a non dentate region, apart from nasal septum, mandibular condyle, coronoid process and the palate, to accommodate such ectopic eruptions of teeth. Due to its rarity and lack of consensus over its management, the incidence deserves to be added to the literature and discussed. Early surgical

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Sarcoidosis Vasc Diffuse Lung Dis. 2006 Oct;23(3):215-21.

### Chronic beryllium disease among dental technicians in Israel.

Fireman E, Kramer MR, Priel J, Lerman Y.

Institute of Pulmonary and Allergic Diseases, National Service for Interstitial Lung Diseases Tel Aviv Sourasky Medical Center, Israel. fireman@tasmc.health.gov.il

#### Abstract

**BACKGROUND AND AIM:** The potential risks of beryllium use in the dental industry have been recognized for some time. This is the first case series that focuses on the effect of a number of potentially harmful effects of substances that induce lung disease among dental technicians with emphasis on beryllium as a major risk factor in the work environment of dental technicians.

**METHODS:** All the dental technicians consecutively recruited to this study had past occupational exposure to beryllium. They were evaluated in order to confirm immunological evidence of beryllium exposure for differential diagnosis between sarcoidosis and chronic beryllium disease (CBD). They were tested for beryllium sensitization by the beryllium lymphocyte proliferation test (BeLPT), and underwent lung function and induced sputum (IS) studies. Each had earlier undergone a comprehensive evaluation that included high-resolution computerized tomography, bronchoscopy and transbronchial biopsy to establish the final diagnosis of their condition.

**RESULTS:** There were 24 enrollees (mean age 49.7 +/- 13.7 years, 17 males, 7 females) of whom 12 (50%) had positive BeLPT findings and were finally diagnosed as suffering from CBD, 7 (29%) had negative BeLPT findings and were diagnosed as suffering from another pulmonary pathology (sarcoidosis, chronic obstructive pulmonary disease, rejection of transplanted lung), and 5 (20.8%) had negative BeLPT findings and were diagnosed as being free of pulmonary disease.

**CONCLUSION:** This case series study demonstrates that dental technicians are exposed to beryllium and various other occupational dusts and chemicals and are at high risk of developing CBD and other lung diseases. Our findings emphasize the need for awareness of the medical community to detect occupation related diseases in this profession.

PMID: 18038921 [PubMed - indexed for MEDLINE]

MeSH Terms, Substances

LinkOut - more resources

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#### Related citations in PubMed

Non-invasive diagnosis of chronic beryllium disease in workers ex [Occup Environ Med. 2010]

Misdiagnosis of sarcoidosis in patients with chronic [Sarcoidosis Vasc Diffuse Lung Dis. 2003]

Beryllium-stimulated neopterin as a diagnostic adjunct in chronic beryllium [Am J Ind Med. 2003]

Review Significance of the blood beryllium lymphocyte prolif [Environ Health Perspect. 1996]

Review Beryllium hypersensitivity and chronic beryllium lung diseases [Curr Opin Pulm Med. 2009]

See reviews...

See all...

#### Cited by 1 PubMed Central article

The uses and adverse effects of beryllium on health. [Indian J Occup Environ Med. 2009]

#### Related information

Related Citations



# Tanımlayıcı Epidemiyoloji

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- KİŞİ : Kim?
  - YER : Nerede?
  - ZAMAN: Ne Zaman?
- } Epidemiyolojik değişkenler



# Değişken

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- Bağımlı – Bağımsız

## Örnek 1

- Bağımlı değişken
- Doğum kontrol yöntemi bilgisi
- Bağımsız değişkenler
- Yaş, cinsiyet, eğitim düzeyi

## Örnek 2

- Bağımlı değişken
- Doğum kontrol yöntemi uygulama
- Bağımsız değişkenler
- Yaş, cinsiyet, eğitim düzeyi, doğum kontrol yöntemi bilgisi





# Tanımlayıcı Epidemiyoloji

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- Araştırma hipotezi yok ya da sıklık ile sınırlı
- Risk faktörlerini değerlendirmenin ilk aşaması
- Risk gruplarının ve hizmet önceliklerini belirleyerek sağlık hizmetlerinin planlanmasında kullanılır.

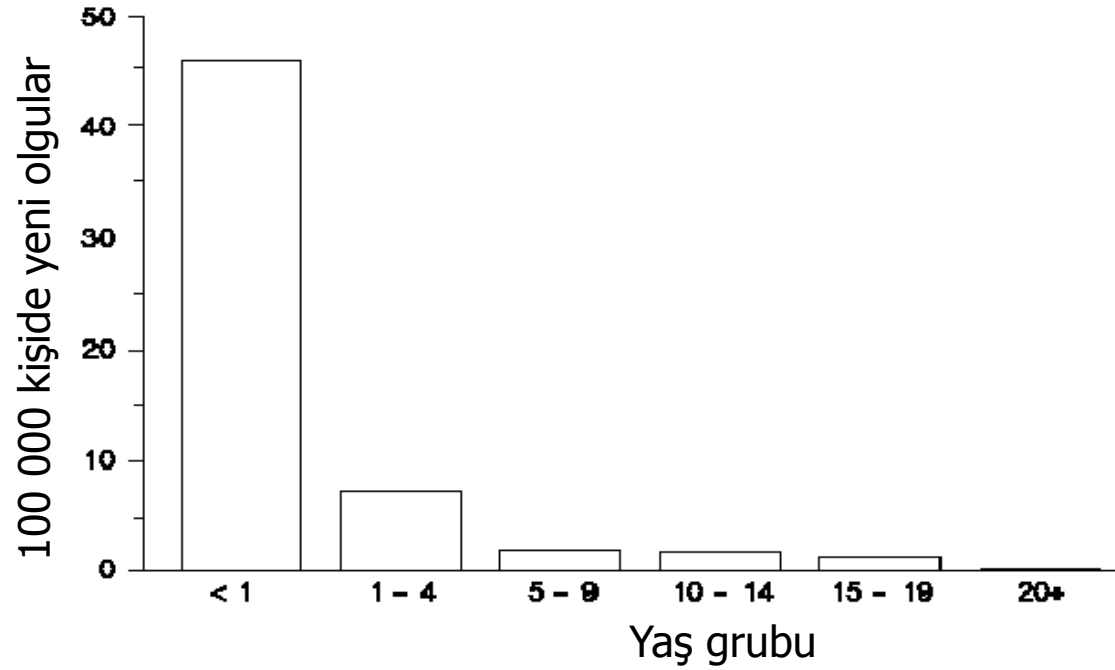
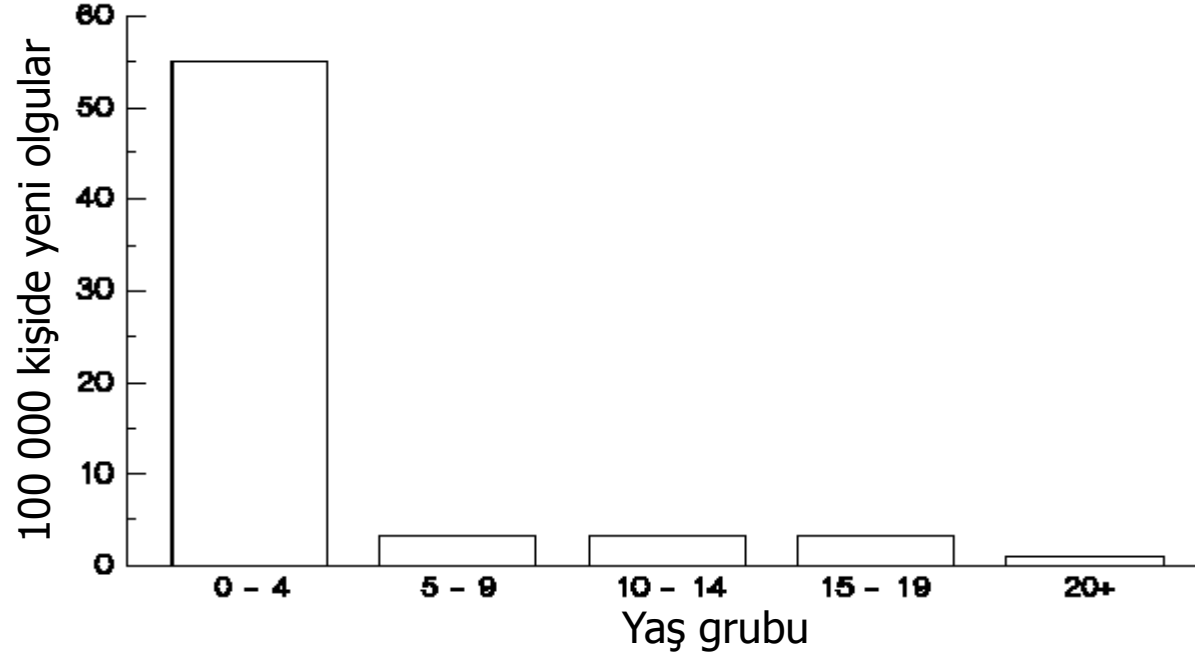


# Kiři

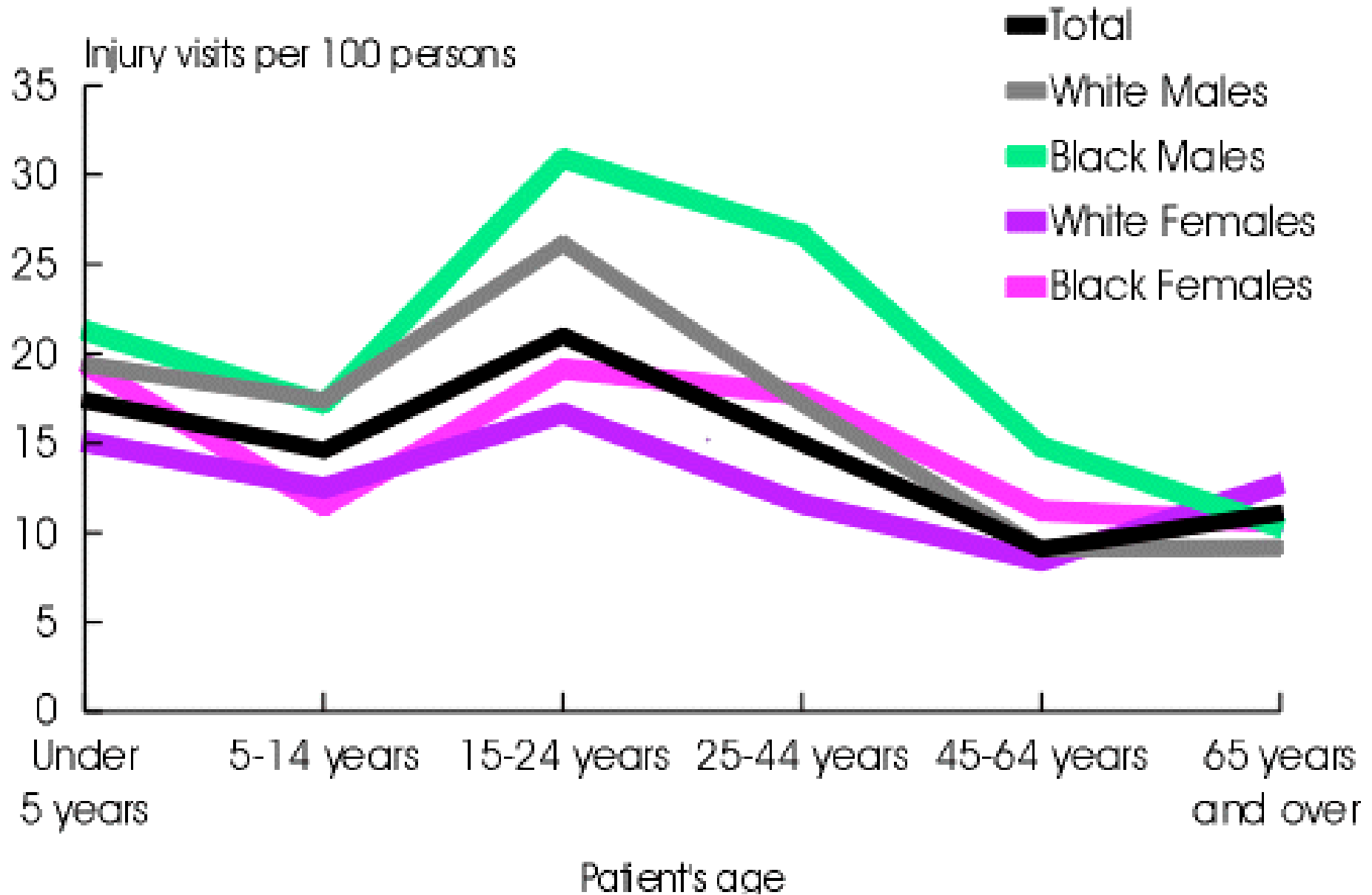
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- Yař
- Cinsiyet
- Meslek
- Baęıřıklık
- Altta yatan hastalık
- İlaç öyküsü
- Beslenme durumu
- Sosyoekonomik etmenler
- Eęitim
- Hobiler
- Yolculuk öyküsü
- Bireysel alışkanlıklar
- Stres
- Genetik yapı
- Aile yapısı
- Dini özellikler

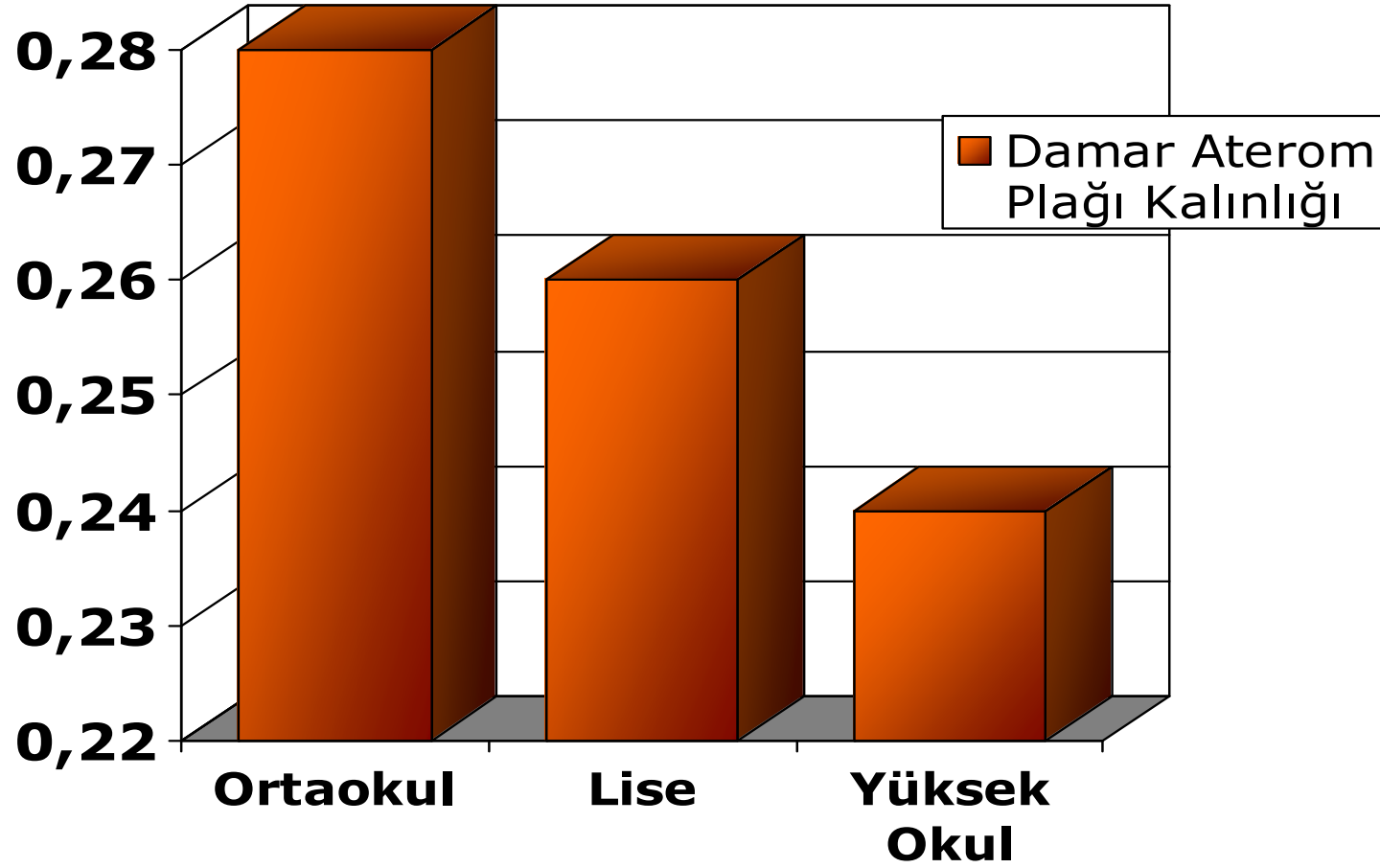
## ABD'de 1989'da farklı yaş gruplarında boğmaca insidansı



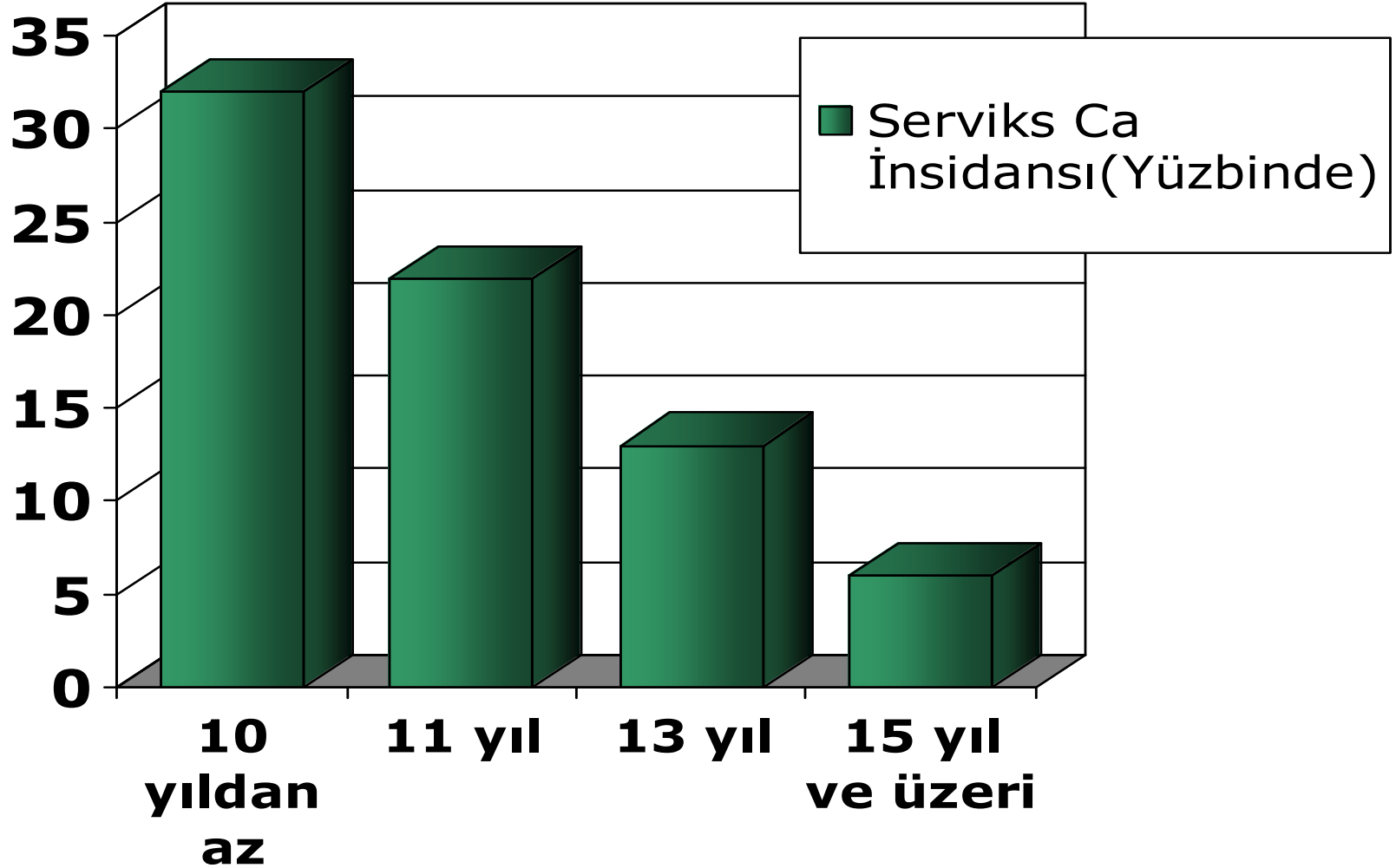
1992-95 arasında ABD'de hasta yaşı, ırkı ve cinsiyetine göre acil servis hizmetlerine yıllık başvuru hızı



# Eđitim Süresi ve Damar Sertliđi İliřkisi

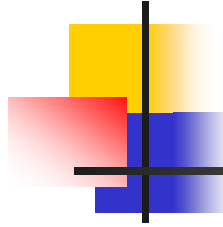


# Kadınlarda Eğitim Süresi- Serviks Kanseri İlişkisi



# Ailede Diyabet Öyküsü

| <b>Diyabet Riski</b>                                          | <b>Oran</b>  |
|---------------------------------------------------------------|--------------|
| <b>Genel toplum</b>                                           | <b>1/300</b> |
| <b>Hasta bireyin çocuđu</b>                                   | <b>1/25</b>  |
| <b>Hasta bireyin kardeři (diđer aile üyeleri sađlam)</b>      | <b>1/14</b>  |
| <b>Hasta bireyin kardeři (diđer aile üyelerinde hastalık)</b> | <b>1/6</b>   |
| <b>Hasta bireyin ikiz kardeři</b>                             | <b>1/3</b>   |



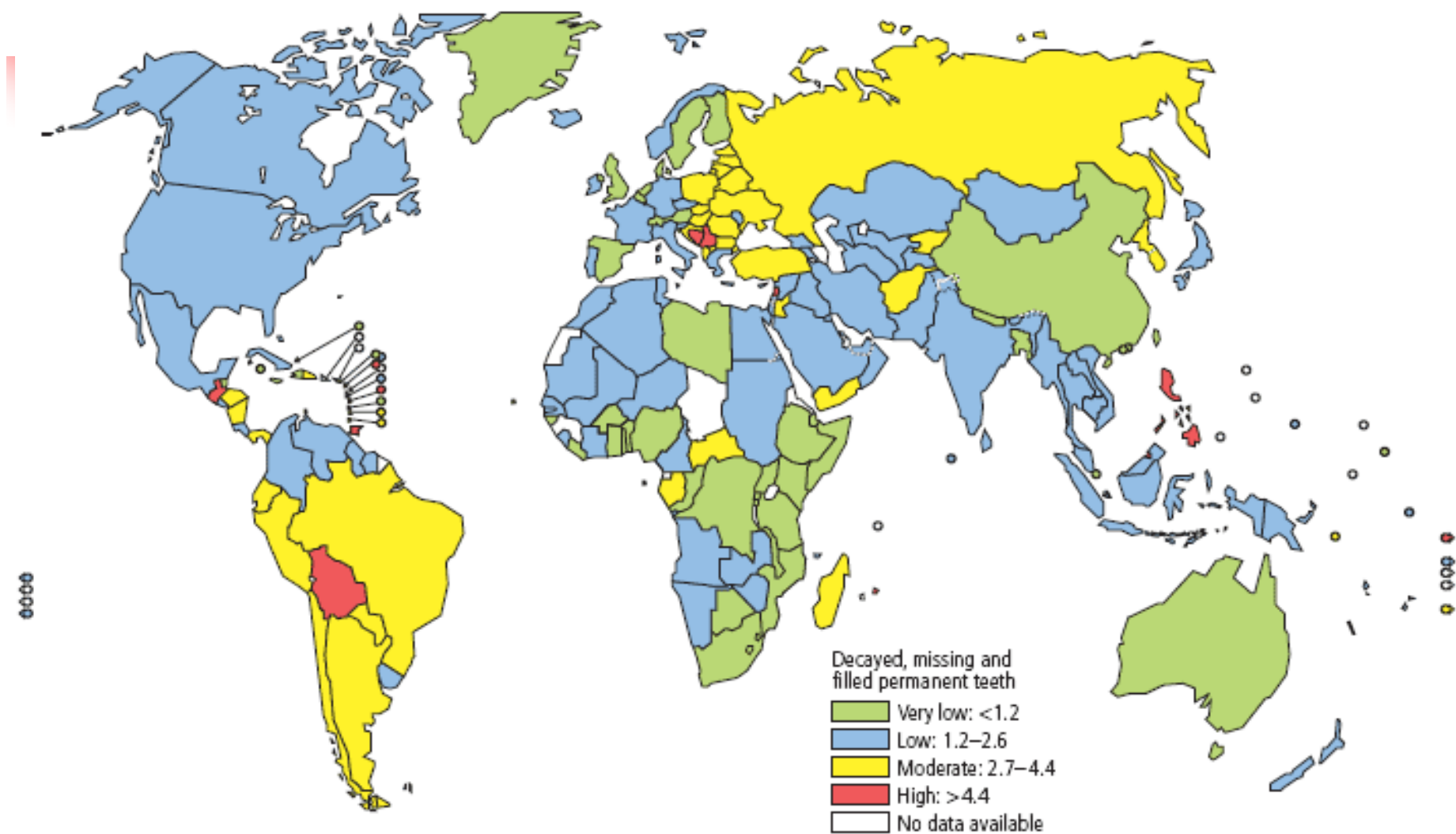
# Yer

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- Coğrafya
- İklim
- Yerleşim yeri



Fig. 1. Dental caries levels (Decayed, Missing and Filled Teeth (DMFT) index) among 12-year-olds worldwide, December 2004



Source: refs. 1-3.

WHO 05.113



# Zaman

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- Mevsim

- Duygulanım, kollajen doku etkilenimi

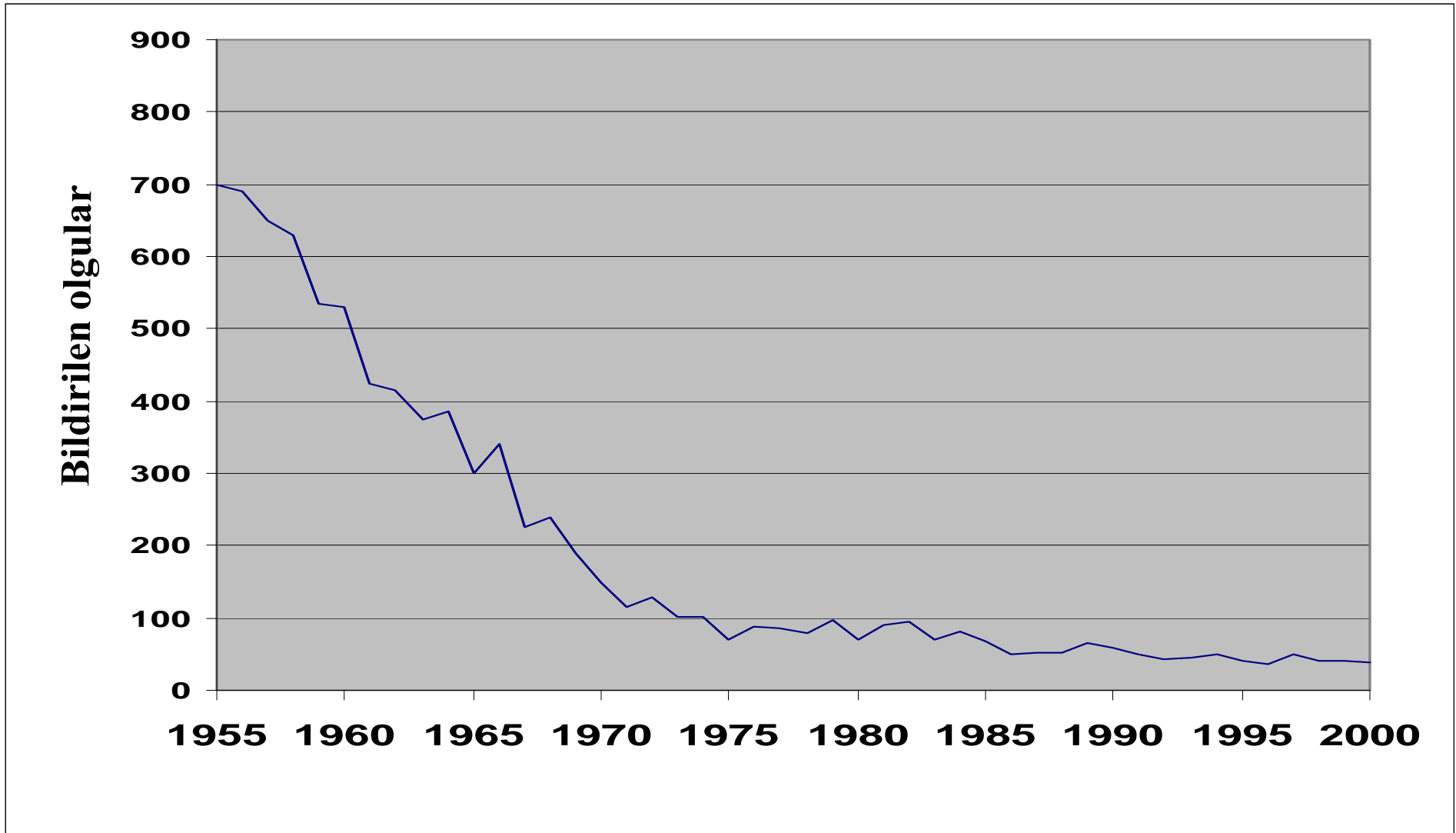
- Süre

- Güneşte kalma, beyin oksijenlenememesi, ağrı

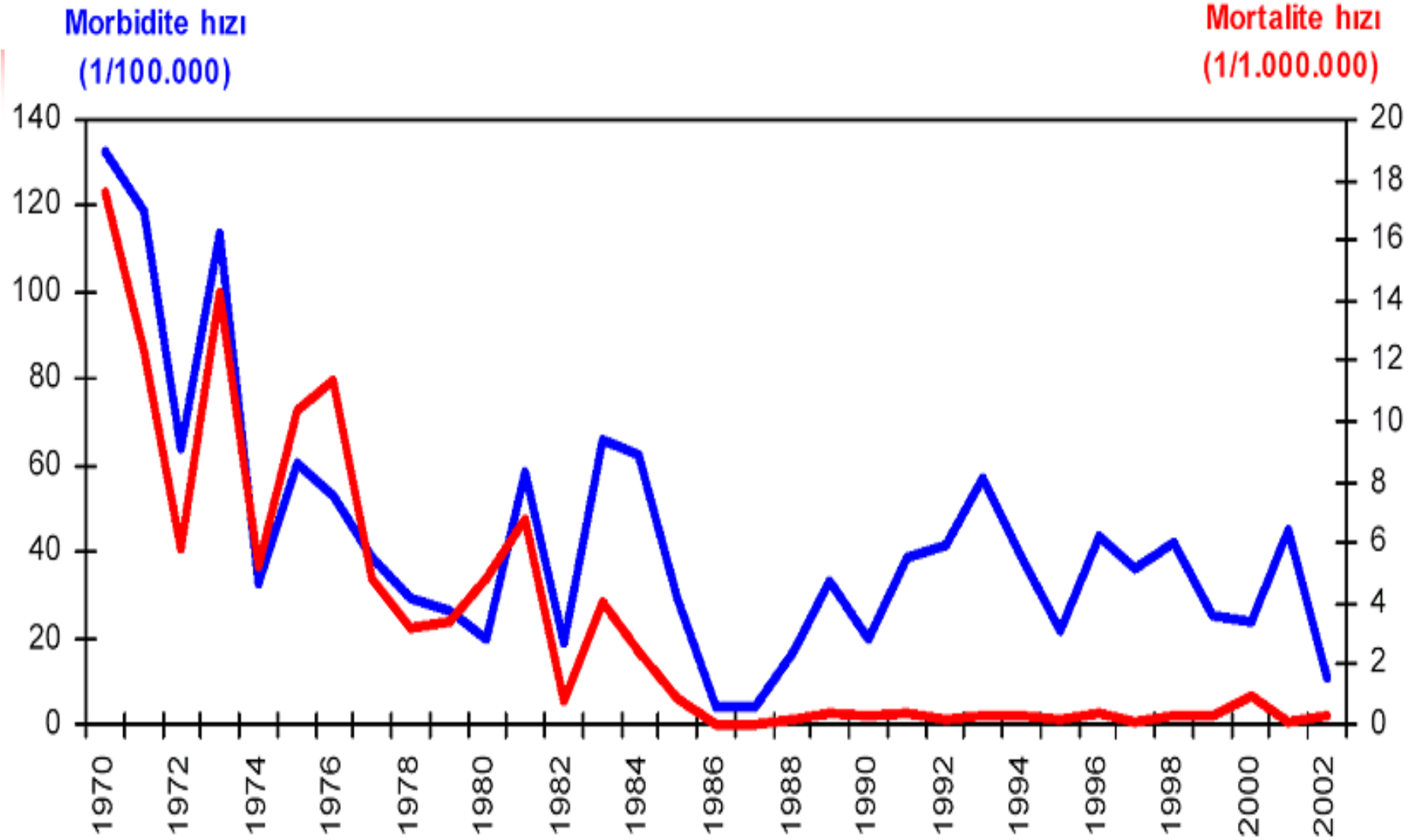
## ABD'de 1930-1990 arasında yıla göre sıtma sıklığı



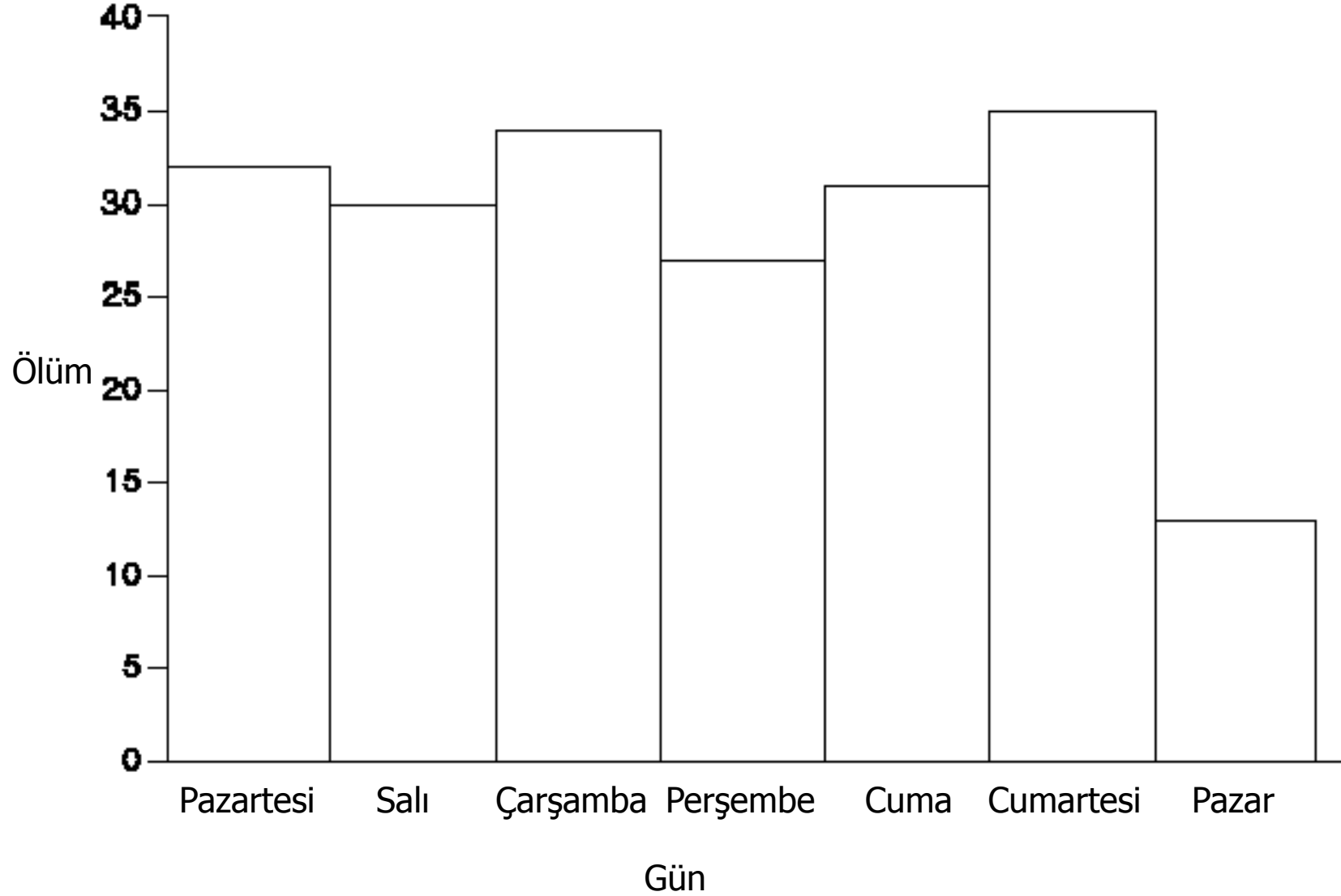
# Tetanoz –ABD, 1955-2000



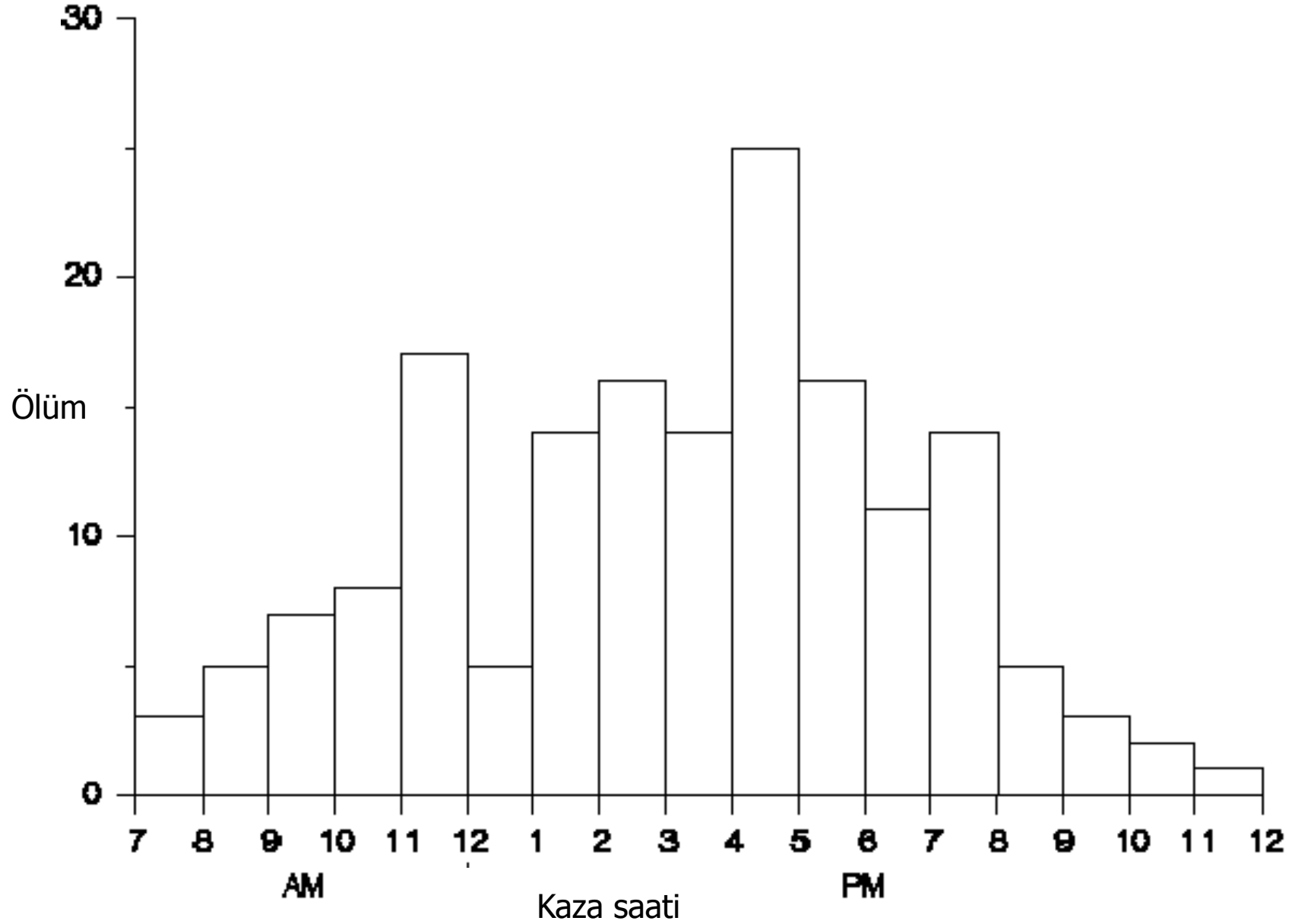
# Türkiye'de Kızamık Morbidite ve Mortalite Hızları, 1970-2003



## ABD'nin Georgia eyaletinde ölümlerle sonuçlanan traktör kazalarının ölüm gününe göre dağılımı



## ABD'nin Georgia eyaletinde ölümlle sonuçlanan traktör kazalarının kaza saatine göre dağılımı





# Zaman

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Gerçekte artmadığı halde artmış gibi görünen hastalıklar?

- ✓ Bildirim artmıştır
- ✓ Tanı kriterleri değişmiştir
- ✓ Sağkalım artmıştır





# Kesitsel Arařtırmalar

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Doç Dr. Zeliha Öcek  
Halk Saęlıęı ABD



# Çözümleyici Araştırmalar

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- Tanımlayıcı epidemiyolojiyi kapsar
- Açık, net bir hipotezi olmalı
  - Maruziyet hastalık riskini arttırır
  - Maruziyet hastalık riskini en az iki kat arttırır



# Hedefler

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- Kesitsel araştırma tekniğini tanımlayabilme
- Araştırma düzeni şemasını çizebilme
- Hastalık hızı hesaplayabilme
- Avantaj ve dezavantajlarını sayabilme



# Kesitsel Arařtırmalar

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- Prevalans arařtırmaları
- Bir hastalık veya durumun arařtırma sırasındaki sıklığı

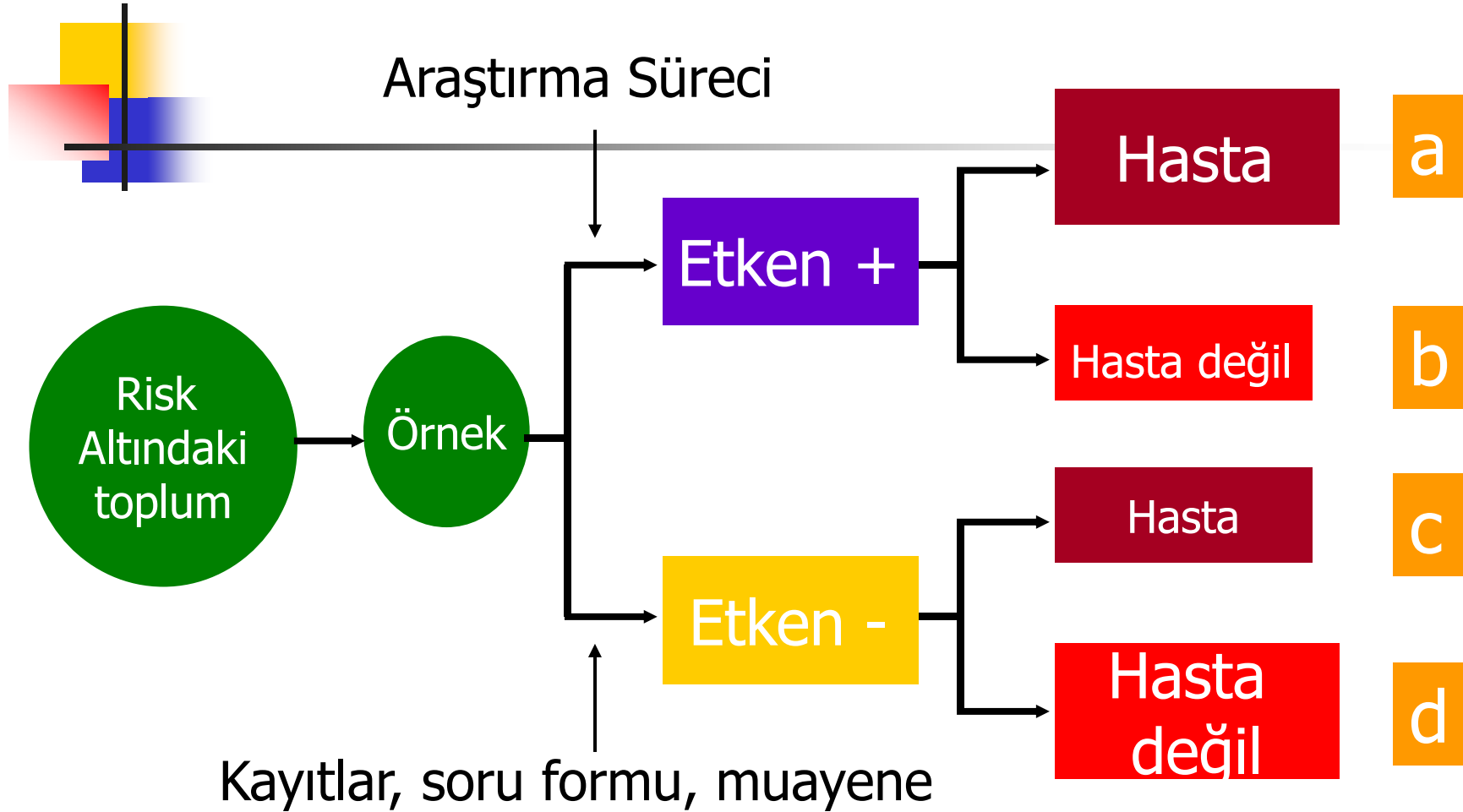


# Kesitsel Arařtırmalar

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- Neden – Sonu ilişkisi
  - Belirli bir zamanda
  - Bir arada incelenir
- Hekimlerin meslek memnuniyeti ve ruh saėlıėı
- Sosyal gvence ve saėlık hizmetinden yararlanma
- Etnik kken ve orak hcreli anemi
- Eėitim dzeyi ve etkin aile planlaması yntemi kullanımı
- ernobil kazası ve akut etkiler
- Hipertansiyon hastalarında tuzlu yeme ve dem
- Hava kirliliėi –astım
- Spina bifida okkulta (doėumsal omurga aıklıėı) – enuresis nokturna (gece iřemesi)

# Kesitsel Araştırma Düzeni



$$\text{Toplam Prevalans} = (a+c / a+b+c+d) \times k$$

$$\text{Prevalans (Etken +)} = (a / a+b) \times k$$

$$\text{Prevalans (Etken -)} = (c / c+d) \times k$$

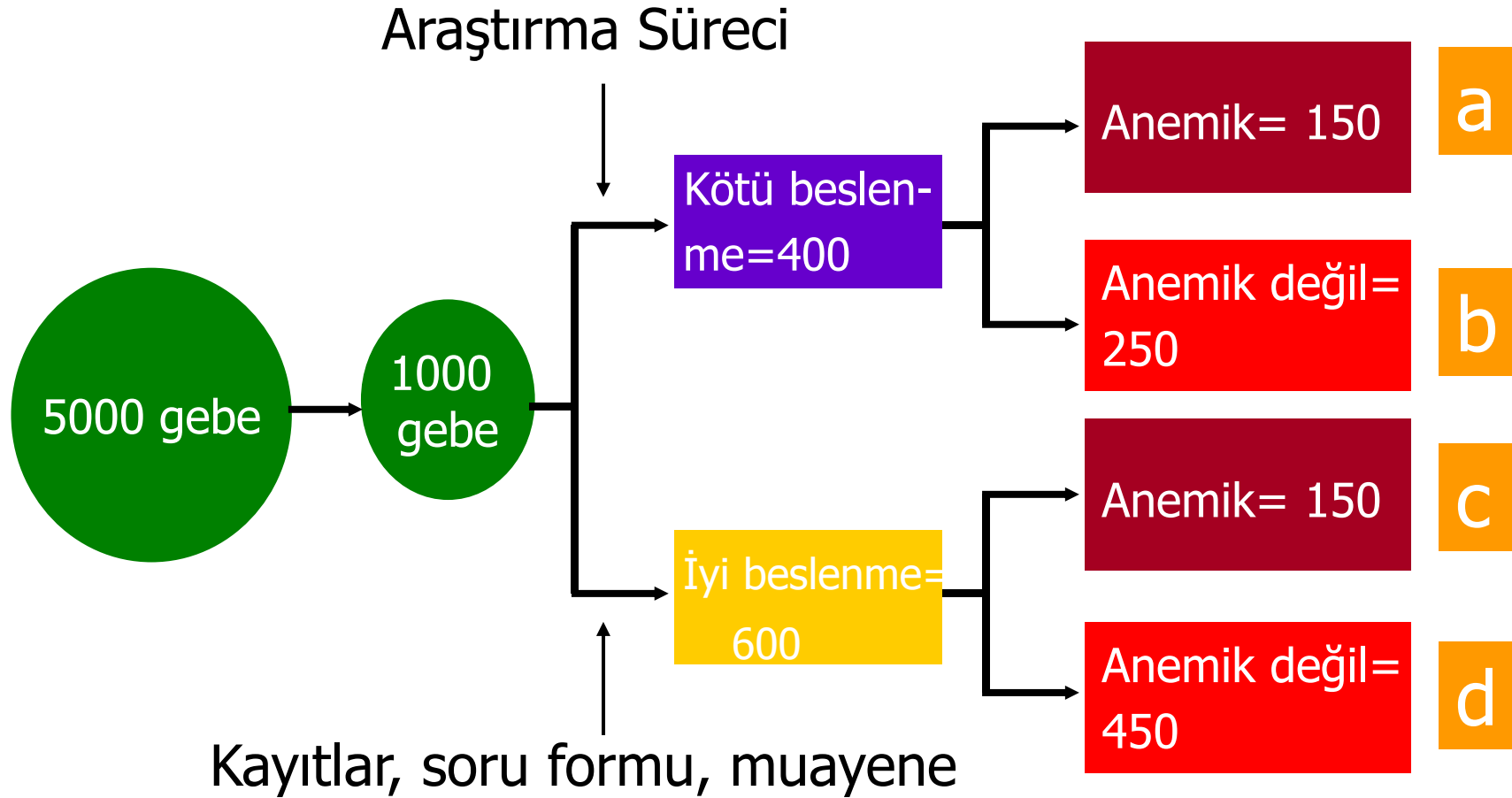


## Soru

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- 5000 gebenin bulunduğu bir bölgede anemi sıklığı ile beslenme ilişkisinin araştırılmasına karar verilmiştir. 1000 gebenin dahil edildiği örnek grup içinde kötü beslenen 400 gebeden 150 tanesinde anemi olduğu, normal beslenen diğer gebelerde anemi olanların sayısının da 150 olduğu belirlenmiştir.

# Kesitsel Araştırma Düzeni



Toplam Prevalans=  $300 / 1000 = \% 30.0$

Prev. (E+)=  $150 / 400 = \% 37.5$

Prev. (E -)=  $150 / 600 = \% 25.0$





# Olumlu Özellikleri

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- Birden fazla olay /durum/ sorun aynı anda incelenebilir
- Kısa sürede tamamlanır
- Sonuçlar genellenebilir
- Ucuzdur



# Olumsuz Özellikleri

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- Neden sonuç ilişkisinin sırası belirsiz
- Araştırma başlamadan
  - İyileşenler, ölenler ve göç edenler için hastalık boyutu ve nedenleri incelenmez
  - Fatalitesi yüksek hastalıklar için uygun değil



# Olumsuz Özellikleri

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- Katılım yetersiz olabilir  
% 80= iyi    % 40: kötü
- Katılım oranı
  - Araştırma konusuna
  - Kişisel özelliklere
  - Araştırma bölgesi özelliklerine
  - Soruların niteliğine
  - Soru sayısına  
bağlıdır