

A Contribution to the History of Hearing Screening Programs: Dr. Muhiddin Hekimbaşızâde's Recommendations for Hearing Screening at School Entry a Century Ago

İşitme Tarama Programları Tarihine Bir Katkı: Yüzyıl Önce Hekimbaşızâde Dr. Muhiddin'in İlkokula Başlangıçta İşitme Taraması Önerisi

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ABSTRACT

School hearing screening program has been carried out in Türkiye since 2015. Screening for hearing loss in schoolchildren was first reported in USA in 1876 and in UK in 1930. In the book titled as "Hygiene of the Ear, Deafness: The Education and Discipline of Deaf, Dumb and Blind Children", which was written to enlighten general population, Hekimbaşızâde Dr. Muhittin recommended hearing screening at school-entry in Istanbul in 1906 and proposed a method for hearing screening. Further, he reported that 15% of the school children were unable to hear teachers' speech beyond six meters, which roughly indicates mild-moderate hearing loss. We point out importance of this book and his author regarding not only in the history of the fields of health literacy and otology, but also its valuable contributions to the contemporary efforts for improvements in public health and pediatric otology.

Key words: School hearing screening program, Hekimbaşızâde Dr. Muhittin, health literacy, otology, public health, history of medicine

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ÖZET

Türkiye'de Okul İşitme Tarama Programları 2015'den bu yana uygulanmaktadır. Okul çocuklarında işitme kaybı taraması ilk kez ABD'de 1876'da ve İngiltere'de 1930'da bildirilmiştir. Genel toplumu aydınlatmak amacıyla 1906'da yazılan "Kulağın Hıfzıshhası Sağırlık, Sağır Dilsiz ve Âmâ Çocukların Usul-i Talim ve Terbiyesi" isimli kitapta, Hekimbaşızâde Dr. Muhittin, İstanbul'da okula başlayan çocuklara işitme taraması yapılmasını tavsiye etmekte ve bunun için bir metot önermektedir. Ayrıca, okul çocuklarının %15'inin 6 metreden konuşmayı anlamada yetersiz olduğunu da bildirmektedir ki bu kabaca hafif-orta derecede işitme kaybına karşı gelmektedir. Bu çalışmada; sadece bu kitabın ve yazarının sağık okuryazarlığı ve otoloji tarihindeki önemine değil, aynı zamanda günümüzde halk sağlığı ve pediatrik otoloji alanlarındaki ilerlemelere olan katkısına da dikkati çekmek istiyoruz.

Anahtar sözcükler: Okul işitme programı, Hekimbaşızâde Dr. Muhittin, sağık okuryazarlığı, otoloji, halk sağlığı, tıp tarihi

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School hearing screening program (SHSP) has been carried out in Türkiye since 2015. It was started by Directorate General for Public Health of Health Ministry after the establishment of newborn hearing screening program (NHSP) (1). NHSP started as a pilot study in 2004 and then in 2008, the national NHSP started and its coverage ratio reached to over 90% in 2014 (1,2).

During SHSP in Türkiye, the hearing status of the first-year elementary school students is tested within the school via automated audiometry devices by the trained audiometry technicians coming from the provincial Directorate of Public Health. The failed pupils are taken to the second tests two days later and then the re-failed ones are referred to otolaryngology departments of the secondary and tertiary hospitals (3).

Before the national SHSP, with exception of the sporadic referrals from the pediatrics department for control of hearing of the children at/around 5 years of age (2,4), screening hearing of the pupils has never been an issue in Türkiye. However, evaluation of hearing has been included in the well-child follow-up program of the Social Pediatrics Department for years (2,4).

Nevertheless, Hekimbaşızâde Dr. Muhiddin (Hekimbaşı-zâde Muhiddin/Muhyiddin Bey or Muhiddin Nuri Bey; 1871-1936) who graduated from Military Medical School (Tıbbiye-yi Harbiye) in Istanbul in 1891 and worked as a physician in Istanbul during the transition period from Ottomans Empire to Turkish Republic (Sarı, 1986) pointed out importance of hearing screening for the pupils at the elementary school entry (Mekatib-i iptidai) in his book ("Hygiene of the Ear, Deafness: The Education and Discipline of Deaf, Dumb and Blind Children", figure 1) published in 1906 (6).

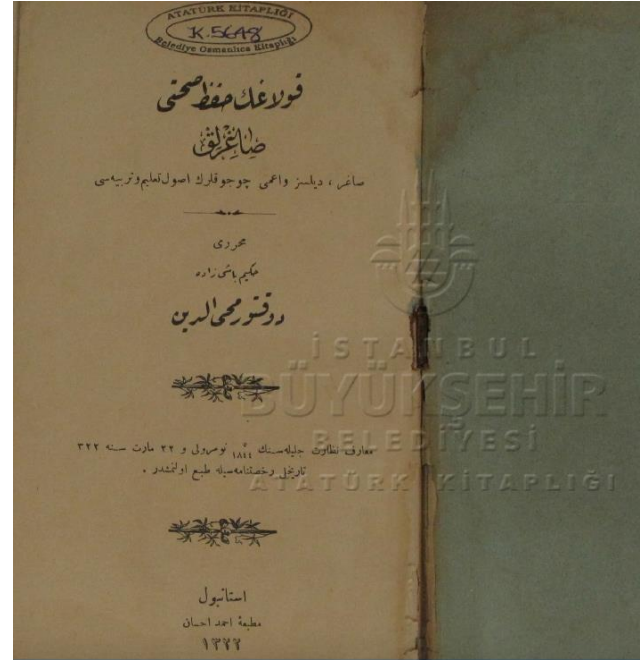
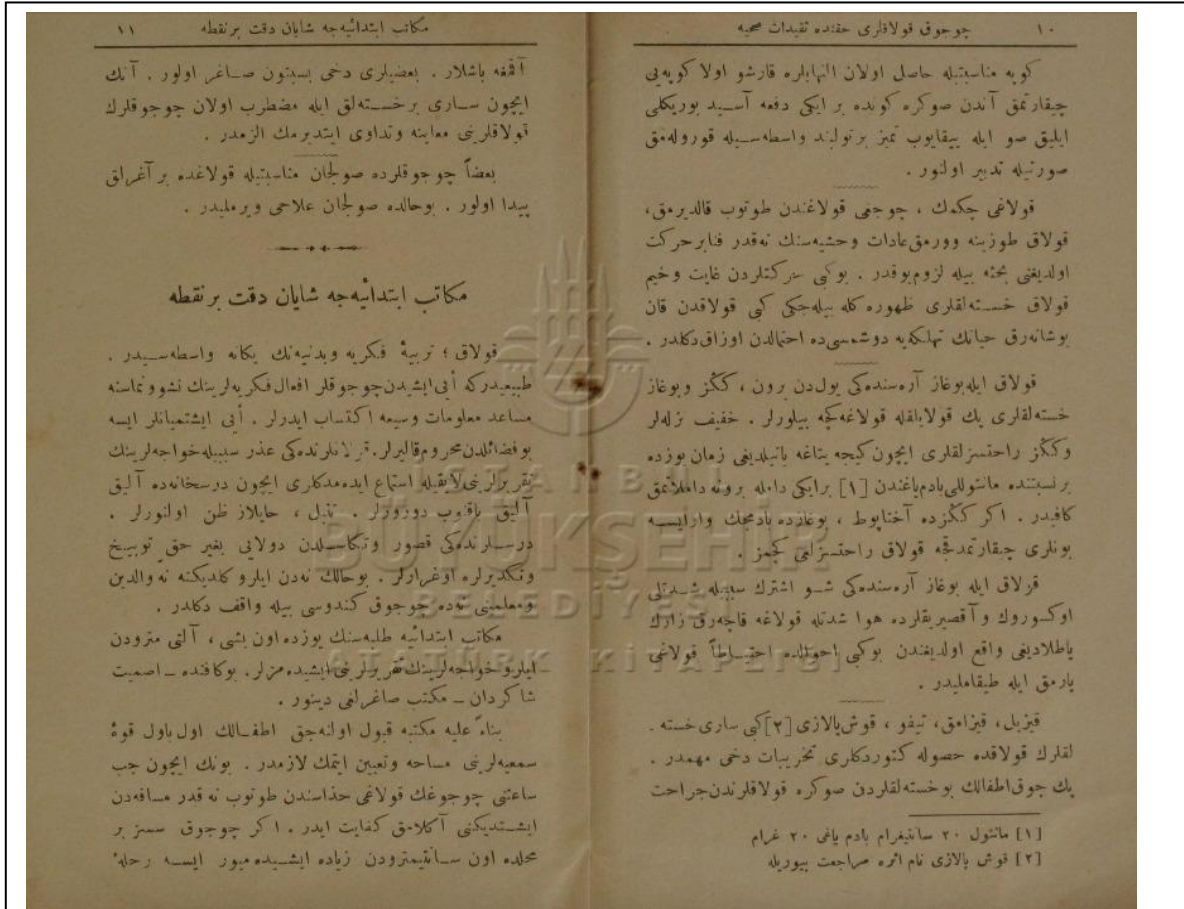


Figure 1. Cover of “Hygiene of the Ear, Deafness: The Education and Discipline of Deaf, Dumb and Blind Children.” “Kulağın Hıfzısıhhası Sağırlık, Sağır Dilsiz ve Âmâ Çocukların Usûl-i Talim ve Terbiyesi”, (İstanbul: Matbaai Ahmet İhsan, 1322) written by Hekimbaşızâde Dr. Muhiddin. This book contains 48 pages including 2 index pages at the end. The book has two separate chapters; the first chapter focus on general information about ear and ear health and the latter one is about the education of deaf, mute, and blind children.

Hekimbaşızâde Dr. Muhiddin emphasized that the main aim of writing the book was to enlighten general population regarding ear and hearing health. One of the subsections in this book (“An Important Point for Elementary Schools”, pages 11-12) directly describes why hearing screening is necessary for the pupils at the school-entry and how it could be performed, as follows (the original text and its transcription in the contemporary Turkish alphabet are seen in Table 1)

Table1. The original text about school screening (pages: 11-12) and its transcription in contemporary Turkish alphabet.**Mekاتب-i İbtidaiyece Şayan-ı Dikkat Bir Nokta**

Kulak, terbiye-i fikriye ve bedeniyenin yegâne vasıtasıdır. Tabî'dir ki iyi işiten çocuklar faal-i fikriyelerinin neşv ü nemâsına müsâ'id ma'lûmât-ı vesî'a'ı aktisap ederler. İyî işitmeyenler ise bu fezâilden mahrûm kalırlar. Kulaklarındaki özürlü sebebiyle hocalarının takrirlerini lâıyıkıyla istimâ' edemedikleri için dershanede alık alık yakınıp dururlar. Tembel, haylaz zan olunurlar. Derslerindeki kusur ve tekâsülünden dolayı bağırarak, tembîh ve tekdirlere uğurlar. Bu halin neden ileri geldiğine ne valideyni ve muallimini ne de çocuk kendisi bile vâkıf değildir.

Mekاتب-i İbtidaiye talebesinin yüzde on beşi, altı metreden ileri hocalarının takrirlerini işitemezler. Buna fende asamiyet-i şâkirdân, mektep sağırılığı deniyor.

Binaenaleyh mektebe kabul olunacak etfâlin evvel be evvel kuvve-i sem'iyelerini mesâha ve ta'yîn etmek lâzımdır. Bunun için cep saatini çocuğun kulağı hizasından tutup ne kadar mesafeden işittiğini anlamak kifayet eder. Eğer çocuk sessiz mahalde on santimetreden ziyade işidemiyor ise rahle-i tedrisiyenin yakınında oturmalıdır. Bir mektepte kuvve-i sem'iyeleri noksan olan etfâlin adedi yirmiyi mütecaviz ise onlara husûsî bir derslane tayin eylemek icâb eder.

"The only instrument for mental and physical instruction is the ear. Naturally, hearing children obtain information pertinent to the development of their minds. Those with hearing impairments are ineligible for this superior qualification. Due to an impairment in their ears, they mourn/stare incoherently in the classroom because they were unable to hear their lecturers' lectures adequately. They are seen as lazy and mischievous. They are reprimanded and cautioned for their errors and sloth in their lectures. Neither the parent, the teacher nor the child himself can explain why this scenario has arisen. 15 % of children in primary school cannot hear their teachers' speech beyond six meters. In science, this is called school deafness. Therefore, it is vital to measure the hearing ability of incoming students. For this, it is sufficient to hold the pocket watch at the child's ear level to determine the distance from which he or she is listening. If a child cannot hear beyond ten centimeters in a quiet environment, they should be seated close to the teacher. If there are more than twenty children with hearing impairment in a school, a special classroom must be designated for them."

The information above was also quoted in "Nevsal-ı Afîyet (Sâlnâme-i Tibbi, Volume 1)" which was one of the medical annuals written by Besim Ömer Akalın (1861-1940) in the first years of the 20th century (7). Further, Özlü and Tiryaki (2020) recently published a full translation of Hekimbaşızâde Dr. Muhiddin book in contemporary Turkish (8).

As seen in the text presented above, Hekimbaşızâde Dr. Muhiddin declared that ratio of hearing impaired children in elementary schools in Istanbul were about 15% in those years. Since the children with advanced hearing loss, who were not able to speak could not have been directed to the general-stream schools in those years, it could be said that he declared a rate of mild and moderate hearing loss in Istanbul at the end of the 19th century and beginning of the 20th century.

Fortunately, today, much lower hearing loss rates have been reported in preschool or school children in Türkiye: Halavut (2008) found 8% hearing loss in the five-year-old children in Ankara (4); Yılmaz et al. (2018) declared 1,35% in Malatya (9). Therefore, although the specificity and sensitivity of the hearing test method proposed by Hekimbaşızâde Dr. Muhiddin was not similar to contemporary tests, it could be said that his data provide us apparent/satisfactory evidence indicating remarkable improvement in otologic health during the Republic period.

Moreover, as seen in the text above, Hekimbaşızâde Dr. Muhiddin presents us with one of the earliest pieces of advice for hearing screening in elementary school-entry in the world and describes a practical way to screen the hearing level of children. Ruben (2021) noted that screening for hearing loss in schoolchildren in Boston was first reported in 1876 (10). Davis et al. (1997) pointed out hearing screening for primary school attendees in the UK in 1930 (11).

Although the book of Hekimbaşızâde Dr. Muhiddin is known for years, his contributions to contemporary medicine in Türkiye have been overlooked. Besides, he should also be appreciated for his efforts on health literacy for general population, which has unfortunately been another overlooked concept in contemporary medicine in Türkiye.

Conflict of interest

No conflict of interest was declared by the authors.

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