TJFM&PC Turkish Journal of Family Medicine and Primary Care

**Original Research / Özgün Araştırma**

# Missed Opportunities in Adolescent Health: An Overview From Turkey

## Ergen Sağlığında Kaçırılmış Fırsatlar: Türkiye'den Genel Bir Bakış

*Asya Banu Babaoglu[*1], Ulken Tunga Babaoglu[2], Sibel Oymak Yalcin[3], Busra Tozduman[1], Halide Yesim Karakas[1], Mustafa Tozun[1]*

### ABSTRACT

**Introduction:** Serious health problems and poor health habits persist among adolescents despite access to health information and medical care. The study aimed to determine the status of access to health services, the need for health information, and the preferred source of information among adolescents in Turkey. **Method:** In this descriptive study, a questionnaire developed by the researchers was applied online to individuals aged 18-25 between September - December 2017. Descriptive statistics were shown with numbers (n) and percentages (%) or mean (m) and standard deviation (± SD). Pearson chi-square and Kruskal Wallis tests were used for data analysis. **Results:** The mean age of the total 1807 participants was 20.28 (±1.89) and 57% were female. The rate of adolescents whose number of visits to the family physician was accurate to national guidelines was higher among those who had attended public schools and who lived in a nuclear family. This rate was lower among those who continued high school in the lower developed part of Turkey. Only 12% of the adolescents had undergone a full physical examination and few were questioned about psychosocial aspects. The demand for counseling on health topics about risky behaviors differed according to gender. While school was the main 'past' source for information, the family physician was the most 'preferred' one. **Conclusion:** Missed opportunities exist in adolescent health. Adolescent health services should be maintained in a multidisciplinary manner. Especially primary care services and school settings should be strengthened to provide accurate health information to young people.

**Key words:** Adolescent health services, preventive health services, school health, primary care physician, health education.

### ÖZET

**Giriş:** Sağlık bilgilerine ve tıbbi bakıma erişilmesine rağmen, ergenler arasında ciddi sağlık sorunları ve kötü sağlık alışkanlıkları devam etmektedir. Bu çalışmada, Türkiye'de ergenlerin sağlık hizmetlerine erişim durumu, sağlık bilgi ihtiyacı ve tercih edilen bilgi kaynağının belirlenmesi amaçlamıştır. **Yöntem:** Tanımlayıcı nitelikteki bu araştırmada, araştırmacılar tarafından geliştirilen bir anket, 18-25 yaş arası bireylere Eyül – Aralık 2017 arasında, online olarak uygulandı. Tanımlayıcı istatistikler sayı (n) ve yüzde (%) veya ortalama (m) ve standart sapma (± SD) ile gösterildi. Veri analizi için Pearson ki-kare ve Kruskal Wallis testleri kullanıldı. **Bulgular:** Toplam 1807 katılımcının yaş ortalaması 20.28 (± 1.89) idi ve % 57'si kadındı. Aile hekimini ulusal yönergelere göre uygun sayıda ziyaret emiş olan ergenlerin oranı devlet okullarına devam eden ve çekirdek bir ailede yaşayanlar arasında daha yüksekti. Bu oran Türkiye'nin az gelişmiş bölgelerinde liseye devam edenler arasında daha düşüktü. Ergenlerin sadece % 12'si tam bir fizik muayeneden geçmiş ve çok azı psikososyal yönler hakkında sorgulanmıştır. Riskli davranışlarla ilgili sağlık konularında danışmanlık talebi cinsiyete göre değişmektedir. Bilgi için 'geçmişteki' asıl kaynak okul olsa da, aile hekimi en çok 'tercih edilen' kaynaktı. **Sonuç:** Ergen sağlığında kaçırılmış fırsatlar bulunmaktadır. Ergen sağlığı hizmetleri çok disiplinli bir şekilde sürdürülmelidir. Gençlere doğru sağlık bilgisi sağlamak için özellikle birinci basamak hizmetleri ve okul ortamları güçlendirilmelidir.

**Anahtar kelimeler:** Ergen sağlığı hizmetleri, koruyucu sağlık hizmetleri, okul sağlığı, Birinci Basamak Hekimleri, sağlık eğitimi

**Received / Geliş tarihi:** 25.05.2020, **Accepted / Kabul tarihi:** 24.08.2020

[1] Department of Public Health, School of Medicine, Izmir Katip Celebi University, Izmir, TURKEY.
[2] Department of Public Health, School of Medicine, Ahi Evran University, Kirsehir, TURKEY.
[3] Department of Public Health, School of Medicine, Canakkale Onsekiz Mart University, Canakkale, TURKEY.

***Address for Correspondence / Yazışma Adresi:** Asya Banu Babaoglu, Izmir Katip Celebi Universitesi Tip Fakültesi, Cigli Ana Yerleskesi 35620 Cigli/Izmir, TURKEY.
**E-mail:** asyabanu@yahoo.com; asyanbanu.babaoglu@ikcu.edu.tr

Babaoglu AB, Babaoglu UT, Oymak Yalcin S, Tozduman B, Karakas HY, Tozun M. Missed Opportunities in Adolescent Health: An Overview From Turkey. TJFMPC, 2020;14(4): 588-597.

**DOI:** 10.21763/tjfmpc.742560

## INTRODUCTION

Adolescence is a period of transition from childhood to adulthood, where physical, psychological, and economic changes occur. In this period, supporting healthy behaviors and taking steps to protect young people from health risks are critical to prevent health problems in adulthood.[1] Risk-taking behaviors like tobacco, alcohol and drug use, unprotected sexual intercourse, inadequate physical activity, unhealthy diet, and violence are common during adolescence. These risky behaviors may result in death or severe morbidity. Many premature deaths due to risky behaviors can be prevented with appropriate and on-time interventions. It is critical to take precautionary measures before adolescents develop unhealthy behaviors for the prevention of health problems in adulthood.[2]

There are many opportunities to reach young people; individually or collectively, within or outside the health system. Likewise, there are many choices for young people to search for help or information. Family health centers which are a part of primary health care services in Turkey play an important role in adolescent health since these services are easy to reach and free of charge. Family health centers constitute mainly the first point of contact between individuals and the health system. Family physicians working at family health centers are expected to provide preventive, therapeutic, and rehabilitative health services to their registered population. Individuals can register to any family physician of their own choice. According to the Family Medicine Practice Regulation (2013), every family physician is required to update the health records for each registered person -regardless of age and gender- at least once a year. Besides, more frequent monitoring of groups with certain characteristics, such as women of reproductive age, infants, children, and adolescents, is recommended. Guidelines have been created by the Ministry of Health for the standardization of these follow-ups. According to the national "Infant, Child & Adolescent Screening Guideline" which is recommended for the use by family physicians, adolescents should receive a routine well-care visit during each stage of adolescence: *i)* early adolescence (10-14 ages), *ii)* middle adolescence (15-18 ages) and *iii)* late adolescence (19-21 ages).[3] In these visits, it is aimed to conduct a general physical examination, obtain information about the adolescent's psychosocial status within the scope of the HEEADSSS (home, education, eating, activities, drugs, sex, self-harm, safety) assessment tool, and provide counseling if needed. HEEADSSS is a psychosocial assessment tool in which the following topics are questioned; **H**ome and relationships, **E**ducation and employment, **E**ating, **A**ctivities and hobbies, **D**rugs, alcohol and tobacco, **S**ex and Relationships, **S**elf-harm, depression and self-image, **S**afety and abuse.[3,4]

The school environment, family members, friends, books, and media tools are common sources other than health care professionals that adolescents seek health information. However, the reliability of the information of these sources is difficult to check and may cause incomplete or incorrect information.

Literature review and observations of researchers of this study suggest that there deficits and missed opportunities in adolescent healthcare services in Turkey. This study aims to determine the status of adolescents' access to health services, the need for health information, and the preferred source of information by adolescents.

## METHOD

In this descriptive study, an online questionnaire was used to obtain data. Snowball sampling strategy was used for the survey recruitment. The first point of contact consisted of 45 voluntary first and second-grade university students studying in a university in Izmir (Turkey's third-largest city located in the western extremity of Anatolia). Participants were asked to fill out the questionnaire and forward the survey link to their friends who met the inclusion criteria. The data collection phase was conducted between September-December 2017.

Young adults aged 18-25 were identified as the research group (*see limitations*). Participants were asked to respond retrospectively in view of their secondary and high school years. Answers from participants under 18 and over 25 years of age and those who attended secondary and/or high school abroad were excluded ($n$=27). The responses of all other volunteer individuals aged 18-25 were included ($n$=1807).

The survey questionnaire was developed within the scope of National Child & Adolescent Monitoring Guidelines and current literature.[2,3,5–8] The questionnaire covered these main topics: *i)* Socio-demographic variables (age, gender, region, school type, family characteristics), *ii)* type and reason of health care received, *iii)* source of health service/counseling received and *iv)* perception about personal health knowledge and *v*) need for health counseling.

According to the Turkish national educational program, secondary school students are mainly aged between 10-13 and high school students between 14-17 years. These two age groups are also defined as 'early' and 'middle' adolescence stages.[9] Therefore, the data obtained from this study reflect these two stages of adolescence. The term "at least two visits" used in this text, refers to those who have visited the family physician at least twice, one in secondary school and one in high school.

We performed descriptive analyses and compared responses between subgroups; gender, school type, family education level, economic status, regional area. Five regions (West, South, Central, North, and East) which are reflecting differences in socioeconomic development levels and demographic conditions, were defined according to the 2013 Turkey Demographic and Health Survey.[10] Considering the recall factor, for some questions, only the answers for the high school period were analyzed.

Descriptive statistics are shown in percentages (%) with numbers (*n*) and mean values (*m*) with standard deviation *(±SD)*. Pearson's chi-square, and Kruskal Wallis with Dunn-Bonferroni test was used for data analysis. SPSS software 22.0 (IBM Corp., Armonk, New York, USA) was used for analyses and *p*-values below 0.05 were considered to be statistically significant.

Ethics permission for this study was obtained from the ethics committee of Izmir Katip Celebi University (24.11.2017/02).

## RESULTS

A total number of 1807 questionnaires that met the inclusion criteria were taken into consideration. The mean age of the participants was 20.28 (±1.89) and 57% (*n*=1030) were female. Sociodemographic characteristics of the study group, the region of residence during school, and the type of school attended are shown in Table 1.

**Table 1. Socio-demographic characteristics of the study population**

| **Characteristics** | **% (*n*) or *m (±SD)*** | |
|---|---|---|
| **Gender** | **% (*n*)** | |
| Female | 57.0 (1030) | |
| Male | 43.0 (777) | |
| **Mean age** | ***m (±SD)*** | |
| Female | 20.0 (±1.74) | |
| Male | 20.6 (±2.02) | |
| **Parent educational level** | **Mother % (n)** | **Father % (n)** |
| Illiterate | 7.4 (134) | 1.4 (25) |
| Literate | 4.5 (82) | 2.6 (47) |
| Primary & secondary school | 38.3 (691) | 29.0 (523) |
| High school | 22.3 (402) | 24.5 (442) |
| University degree | 27.4 (495) | 42.5 (766) |
| *Missing answers* | *0.2 (3)* | *0.2 (4)* |
| **Perceived economic level** | **% (n)** | |
| Very bad or bad | 8.6 (155) | |
| Intermediate | 59.5 (1076) | |
| Very good or good | 31.8 (574) | |
| *Missing answers* | *0.1 (2)* | |
| **Family structure** | **% (n)** | |
| Nuclear family | 80.8 (1460) | |
| Extended family | 12.3 (223) | |
| Divorced or other | 6.3 (114) | |
| *Missing answers* | *0.6 (10)* | |
| **Region of residence during school** | **Secondary school % (n)** | **High school % (n)** |
| North | 1.3 (23) | 1.4 (25) |
| South | 39.2 (709) | 38.7 (700) |
| East | 16.7 (301) | 16.3 (295) |
| West | 28.5 (515) | 28.7 (519) |
| Middle | 12.7 (229) | 12.7 (229) |
| *Missing answers* | *1.7 (30)* | *2.2 (39)* |
| **Type of school** | **Secondary school % (n)** | **High school % (n)** |
| Public | 82.9 (1498) | 84.6 (1529) |
| Private | 16.8 (304) | 15.0 (271) |
| *Missing answers* | *0.3 (5)* | *0.4 (7)* |

*Categorical variables are shown in percentages (%) with numbers (n). Continuous variables were presented as mean (m) with standard deviation (±SD)*

Most participants (90.9%, *n*=1642) had visited his/her family physician at least once during the secondary or high school period. The rate of adolescents who stated to have visited his/her family

physician at least two times was 73.1% (n=1321). Visiting the family physician at least two times was not affected by gender, parents' educational level, or economic status. However, the rate of 'at least two visits' was higher of those who had attended public schools when compared to private schools ($p$=0.004) and of those who had a nuclear family structure, compared to extended families ($p$=0.003). The rate of adolescents who visited their family physician at least two times was lower among those who continued high school in the eastern part of Turkey, compared to other regions ($p$<0.001). The rate for the northern region was similar to the eastern regions but was not statistically different from other regions (south, middle, and west) (Table 2).

**Table 2. Factors affecting the number of visits to the family physician**

| | Number of visits to Family Physician | | |
|---|---|---|---|
| **Variable** | **≥ 2 *n* (%)** | **< 2 *n* (%)** | ***P*** |
| **Gender** | | | |
| Female | 771 (58.4) | 257 (46.8) | 0.05 |
| Male | 550 (41.6) | 226 (53.2) | |
| **Mother's educational status** | | | |
| Secondary school or under | 653 (49.5) | 253 (52.6) | 0.24 |
| High school and over | 667 (50.5) | 228 (47.4) | |
| **Father's educational status** | | | |
| Secondary school or under | 428 (32.4) | 166 (34.5) | 0.41 |
| High school and over | 891 (67.6) | 315 (65.5) | |
| **Perceived economic status** | | | |
| Bad/intermediate | 908 (68.8) | 322 (66.8) | 0.42 |
| Good/very good | 412 (31.2) | 160 (33.2) | |
| **Family structure** | | | |
| Nuclear | 1091 (82.8) | 336 (76.7) | **0.003*** |
| Extended / other | 226 (17.2) | 111 (23.3) | |
| **Type of secondary school** | | | |
| Public | 1124 (85.2) | 371 (77.3) | **<0.001*** |
| Private | 195 (14.8) | 109 (22.7) | |
| **Type of high school** | | | |
| Public | 1139 (86.4) | 338 (81.0) | **0.004*** |
| Private | 179 (13.6) | 91 (19.1) | |
| **Region of high school*** | | | |
| North | 14 (56.0)$^{ab}$ | 11 (44.0) | |
| South | 545 (78.1)$^{b}$ | 153 (21.9) | |
| Middle | 177 (77.3)$^{b}$ | 52 (22.7) | **<0.001**** |
| East | 171 (58.2)$^{a}$ | 123 (41.8) | |
| West | 394 (75.9)$^{b}$ | 125 (24.1) | |

** Pearson's chi-square test*
***Kruskal Wallis with Dunn-Bonferroni (a & b symbols stand for differences between groups)*

Considering only the visits during the high school period; 81.5% ($n$=1276) of the visits were for diagnosis & treatment, 7.3% ($n$=114) were for 'need for a health report', 6.6% ($n$=103) for a 'routine health check' and 3.8% ($n$=59) for 'counselling'. Thirteen respondents (0.8%) did not remember their reason to visit the family physician.

The most frequently received medical care at the primary health care unit was laboratory screening (47.7%, $n$=784) and being questioned for the vaccination status (46.2%, $n$=758). The rate of adolescents whose height and weight were measured was about 30%, and the rate of those whose blood pressure was measured was 20.9% ($n$=343). Only 12.3% ($n$=223) had undergone a full physical examination (Table 3).

Rates of having been asked by the family physician around the HEEADSSS approach show that family physicians were most likely to ask adolescents about their education & employment status (48.6%, $n$=798). The least questioned topic was sexual health (5.5%, $n$=90) (Table 3).

**Table 3. Type of health care received**

| **Preventive Health Care Practices** | **% (*n*)** |
|---|---|
| Full physical examination | 12.3 (223) |
| Weight measurement | 29.3 (481) |
| Height measurement | 28.3 (465) |
| Blood pressure measurement | 20.9 (343) |
| Questioned for vaccination status | 46.2 (758) |
| Questioned for diet/eating habits | 30.5 (500) |
| Questioned for physical activity | 29.0 (477) |
| Laboratory screening | 47.7 (784) |
| **Psychosocial Interview Topic Around The HEADSSS Approach** | **% (*n*)** |
| Home and relationships | 13.3 (218) |
| Education and employment | 48.6 (798) |
| Healthy eating | 30.5 (500) |
| Activities and hobbies | 10.0 (164) |
| Drugs, alcohol, and tobacco | 22.4 (367) |
| Sex and relationships | 5.5 (90) |
| Self-harm, depression, and self-image | 11.3 (186) |
| Safety and abuse | 7.1 (116) |

"Personal hygiene" was the most prominent topic in terms of having sufficient information (81.9%, n = 1610). The main topics that respondents would like to receive counseling were "psychological development" (59.3%, n=1071), "social development" (44.1%, n=797), and physical activity (38.8%, n=701). Female participants, were more likely to feel self-sufficient about 'personal hygiene' ($p$=0.005). The topic 'drugs, alcohol & tobacco' was not affected by gender. In all other health topics (physical development, psychological development, social development, healthy nutrition, physical activity, sexual & reproductive health, safety & accidents, violence & abuse) males were more likely to feel self-sufficient compared to female participants ($p$<0.05).

The demand for counseling on 'psychological and social development, healthy nutrition, physical activity, safety & accidents, and violence & abuse' was statistically higher among female young adults. 'Drugs, alcohol & tobacco' was the only topic that men demanded more counseling when compared to women (Table 4).

**Table 4. Comparison of counseling needs of women and men**

| **Request for counseling** | | Male *n (%)* | Female *n (%)* | *p* |
|---|---|---|---|---|
| Physical development | yes | 203 (26.1) | 261 (25.3) | 0.71 |
| | no | 574 (73.9) | 769 (74.7) | |
| **Psychological development** | yes | 393 (50.6) | **678 (65.8)** | **<0.001*** |
| | no | 384 (49.4) | 352 (34.2) | |
| **Social development** | yes | 320 (41.2) | **477 (46.3)** | **0.03*** |
| | no | 457 (58.8) | 553 (53.7) | |
| Personal hygiene | yes | 70 (9.0) | 121 (11.7) | 0.06 |
| | no | 707 (91.0) | 909 (88.3) | |
| **Healthy nutrition** | yes | 224 (28.8) | **365 (35.4)** | **0.003*** |
| | no | 553 (71.2) | 665 (64.6) | |
| **Physical activity** | yes | 254 (32.7) | **447 (43.4)** | **<0.001*** |
| | no | 523 (67.3) | 583 (56.6) | |
| Sexual & reproductive health | yes | 190 (24.5) | 278 (27.0) | 0.22 |
| | no | 587 (75.5) | 752 (73.0) | |
| **Drugs, alcohol & tobacco** | yes | **131 (16.9)** | 116 (11.3) | **0.001*** |
| | no | 646 (83.1) | 914 (88.7) | |
| **Safety & accidents** | yes | 156 (20.1) | **286 (27.8)** | **<0.001*** |
| | no | 621 (79.9) | 744 (72.2) | |
| Violence & abuse | yes | 170 (21.9) | **279 (27.1)** | **0.01*** |
| | no | 607 (78.1) | 751 (72.9) | |

** Pearson's chi-square test*

One of the survey questions was about the "source" of receiving counseling/information on health issues and the HEEADSSS topics. Participants were free to mark more than one answer. According to the results, respondents received counseling from different sources besides their family physician.

Considering all information sources, the most commonly received counseling topic was 'personal hygiene' (64.6%, n=1173). Adolescents received least counselling on 'violence & abuse' (47.8%, n=864). 'School' was the leading source of information on all topics. Only 2.6% (n=47) had received counseling in all seven areas (addressed in the HEADSSS approach) from their family physician. In response to the question "*from whom would you like to have received counseling from during adolescence*?" the most frequently marked option was the 'family physician' (51.6%, n=933), followed by the school (39%, n=705) (Table 5).

**Table 5. Past and preferred source of counseling during adolescence**

| **Past source** | Family Physician % (n) | School % (n) | Family % (n) | Friends % (n) | Media % (n) |
|---|---|---|---|---|---|
| Physical development | 7.8 (86) | 61.4 (673) | 18.8 (206) | 13.8 (151) | 20.0 (219) |
| Psychological development | 4.4 (47) | 59.5 (629) | 21.2 (224) | 9.4 (99) | 16.4 (174) |
| Social development | 4.0 (41) | 66.4 (686) | 22.2 (229) | 18.9 (195) | 18.3 (189) |
| Personal hygiene | 10.1 (119) | 67.3 (790) | 32.6 (382) | 5.5 (65) | 14.4 (169) |
| Healthy nutrition | 16.0 (178) | 55.0 (612) | 29.5 (328) | 6.5 (72) | 16.3 (181) |
| Physical activity | 9.7 (99) | 64.7 (660) | 16.6 (169) | 12.2 (124) | 16.2 (165) |
| Sexual & reproductive health | 7.1 (66) | 64.6 (602) | 13.9 (130) | 7.3 (68) | 19.2 (179) |
| Drugs, alcohol & tobacco | 8.1 (86) | 75.6 (806) | 22.4 (239) | 8.8 (94) | 14.7 (157) |
| Safety & accidents | 10.8 (102) | 66.8 (630) | 15.7 (148) | 4.0 (38) | 13.7 (129) |
| Violence & abuse | 5.0 (43) | 73.1 (632) | 20.7 (179) | 6.7 (58) | 14.7 (127) |
| **Preferred source** | 51.6 (933) | 39.0 (705) | 37.5 (678) | 21.5 (389) | 34.7 (627) |

## DISCUSSION

Most of the participants in this study affirmed at least one and visit to the family physician during early or middle adolescence and 73% stated at least two visits, which is compatible according to the national guideline recommendations.[3] This finding was close to another study in which 70% of the adolescents had a health visit every four years.[11] These rates suggest that most of the young people do not face a major problem in accessing primary health care in Turkey. This is presumably a reflection of the development in the health care system in recent years.[10,12] Although it would be more accurate to target at least one visit per year, studies report that many adolescents in even developed countries do not receive annual healthcare visits.[7,13–15]

Access to health care services is highly affected by inequities mainly by poverty, limited transport, cultural norms, age, and gender.[7,16] According to results in this study, gender, economic level or parents' educational status did not affect visiting the family physician at the early and middle stages of adolescence. However, adolescents living in a nuclear family and adolescents attending public schools were more likely to have at least one visit per adolescence stage, as recommended in the guidelines. It is not surprising that living in a nuclear family structure has positive effects on receiving health care when compared to extended or scattered families. However, the fact that adolescents attending public schools have a higher rate for "at least two visits" to family physicians is probably because this health service is also free of charge. This result also leads to the thought that families of students, who can afford private schools, also prefer private health services for their children. This may be due to quality concerns, lower waiting times, or the option to choose their doctor as discussed in another study.[17]

The negative effect of regional inequalities was observed in this study: the rate of adolescents with "at least two visits" was lower among those who continued their education in the eastern part of Turkey. This region owns lower health level indicators and higher infant mortality rates when compared to other regions in Turkey [10,18]. Other studies also report that health care may vary not only between, but also within countries.[19]

The most common reason for admission to the family physician was for non-preventive services, mainly diagnosis and treatment which coincides with other studies.[5,15] This result suggests that most of the adolescents are not seen regularly for preventive care, but mainly for irregular sick visits. To avoid missed opportunities and to provide preventive health services to young people, it is evident that acute care applications are opportunities for preventive health care delivery as recommended in another article. [20] Although nearly all of the participants in this study affirmed at least one visit to the family physician during early or middle adolescence and national

guidelines provide comprehensive preventing care recommendations, the results of this study prove that young people do not benefit sufficiently from their family physicians in terms of preventive health services. The rates of even basic physical examination elements such as height, weight, and blood pressure measurement were very low. Even fever adolescents received behavioral screening and risk-reduction counseling. Very few adolescents had ever undergone a full physical examination. These findings coincide with a study where more than half of primary care physicians stated that periodic health examinations are insufficiently applied in primary care.[21] However, findings show that the basic physical examination should not be neglected in adolescents. According to a national survey, the prevalence of hypertension was about 3%, prevalence of elevated plasma glucose was 9%, and prevalence of of overweight or obesity was 22% among 15-24 aged young adults. Prevalence of psychiatric disorders (mainly depression) was found 11% in the same study.[22]

In many countries, professional guidelines have been prepared to set standards for health care.[23] However, these guidelines are not followed regularly.[24,25] Not receiving essential health services recommended by the guidelines may be related to different factors including lack of time and experience of the health personnel, unawareness of physicians on special needs for adolescents, lack of privacy and time alone with the provider, lack of courage and motivation of adolescents to ask questions to the provider. Furthermore, health care professionals may need support to use office materials like guidelines. An intervention study proved that training health staff to implement guidelines for adolescent preventive services may improve the quality of preventive services for adolescents.[6] Probably, it will be more difficult to regulate the provision of services on issues that are considered taboo in society, like sexual & reproductive health, alcohol & drugs, and violence. However, adolescents need to be empowered especially in these areas since many children and young people face health challenges like sexually transmitted infections, unwanted pregnancies, injuries and violence, and mental diseases.[26–28]

When asked for the need for health information, requests for counseling on topics like sexual health, drugs, safety, and violence, which are major problems in adolescent health, were quite low. Yet, counseling requests may not reflect actual needs. Considering the priority health problems of young people, it is clear that many young people do not have accurate knowledge of these issues or cannot convert their existing knowledge and attitudes into behavior. Therefore, planning health education only according to the demands of young people may be the wrong strategy. But it is of critical importance to involve young people in the decision-making process to achieve better outcomes.[29]

As in adults, health needs in adolescents also vary by gender. Female participants were more interested in receiving counseling on 'psychological and social development, healthy nutrition, physical activity, safety & accidents, and violence & abuse'. It is a fact that women are still more exposed to violence and harassment than men worldwide and are probably, therefore, more concerned in learning about these issues. Also, the idea of becoming a mother in the future, taking care of the family, may have made female participants more sensitive about healthy nutrition. These results reaffirm the issue of gender inequality and the need to empower women, especially adolescents.[30,31]

Male participants, on the other hand, were interested to gain more information about 'drugs, alcohol & tobacco'. Whereas, according to mortality reports, road injury and interpersonal violence are by far the leading cause of adolescent male mortality.[32] All of these mortality causes (accidents, violence, and drugs) are interrelated and preventable situations triggering each other and should be considered as a whole.

Among all health information sources, "school" was in the foreground in all titles. School settings give the chance to deliver information to a large number of children. However, well-equipped educators or school nurses who can provide health education in schools may not always be available. Besides, it may be also difficult to provide privacy or meet individual demands. School-based health education is identified as very important especially for sexual and reproductive health issues which are generally difficult to talk about with family members [33]. Provided that qualified educators are available, school environments should be considered as effective sources for health education.

Because of the ubiquity of the internet and privacy concerns, many adolescents may prefer to gain information from search engines where they can freely search without feeling any embarrassment. However, people, especially adolescents, may become overwhelmed with too much and confusing information bombardment. Therefore health professionals, teachers, and families of adolescents should guide these young people where to look for accurate online health information. Professionals involved in adolescent health should be aware that family relations and social background factors should be taken into account as parents with high education and income are more likely to teach their children health literacy skills.[34]

Participants in this study stated that they received at least counseling from their family physicians. However, the family physician was the most preferred source for health information. Many studies prove the importance of primary care on adolescent health.[35–38] Time alone spent with a trusted health care provider is critical for an adolescent to identify and discuss risky health-related behaviors.[13] Primary healthcare providers should be aware that they play an optimal role in adolescent health.

**Limitations:** As the provincial directorate of the national education directorate did not offer legal permission (due to questions about sexual health, drugs, etc.), the survey could not be carried out on adolescents in the school environment. Similar problems are also indicated in another study conducted in Turkey.[39] Therefore, young adults (18-25 years) were identified as the research group.

Since this study was conducted as an online survey, it should be accepted that young people without internet access could not participate in this study. It also should be noted that the memory factor may have affected the responses.

## CONCLUSION

Although most of the adolescents have access to health care facilities, young people do not receive adequate preventive health services. The present study indicates that very few adolescents were screened according to guideline recommendations. As family physicians were the most preferred source for counseling, interventions to increase family physicians' awareness of adolescent health needs are important to trigger preventive adolescent health services. In particular, studies should be carried out to increase family physicians' regular use of the guidelines. Non-preventive care visits should also be considered as an opportunity to reach out to adolescents.

Schools, where adolescents receive the most information should be strengthened in terms of standard and reliable health education. Considering the large dimension of adolescent health, it is recommended to give importance to the multidisciplinary approach and inter-sectoral cooperation to improve adolescent health comprehensively.

Adolescents' expectations should be valued and taken into consideration, but should not be the only criterion when deciding on topics of health interventions as they may have a low-risk perception.

Besides, interventions to reduce inequalities in communities are critical to ensure equal access for everyone to healthcare facilities.

## REFERENCES


1. Lassi ZS, Salam RA, Das JK, Wazny K, Bhutta ZA. An unfinished agenda on adolescent health: Opportunities for interventions. *Semin Perinatol*. 2015;39(5):353-360. doi:10.1053/j.semperi.2015.06.005
2. World Health Organisation. Adolescents: health risks and solutions. World Health Organisation. https://www.who.int/health-topics/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions. Published 2018. Accessed April 8, 2019.
3. Tezel B, Aydın S, eds. *Infant, Child, Adolescent Screening Guideline*. Ankara: T.C. Sağlık Bakanlığı; 2018. https://hsgm.saglik.gov.tr/depo/birimler/cocuk_ergen_db/dokumanlar/yayinlar/Kitaplar/Bebek_Cocuk_Ergen_Izlem_Protokolleri_2018.pdf. Accessed August 21, 2019.
4. Smith GL, McGuinness TM. Adolescent Psychosocial Assessment: The HEEADSSS. *J Psychosoc Nurs Ment Health Serv*. 2017;55(5):24-27. doi:10.3928/02793695-20170420-03
5. Wong CA, Taylor JA, Wright JA, Opel DJ, Katzenellenbogen RA. Missed opportunities for adolescent vaccination, 2006-2011. *J Adolesc Heal*. 2013;53(4):492-497. doi:10.1016/j.jadohealth.2013.05.009
6. Klein JD, Allan MJ, Elster AB, et al. Improving adolescent preventive care in community health centers. *Pediatrics*. 2001;107(2):318-327. http://www.ncbi.nlm.nih.gov/pubmed/11158465. Accessed March 19, 2019.
7. Azzopardi PS, C Hearps SJ, Francis KL, et al. Progress in adolescent health and wellbeing: tracking 12 headline indicators for 195 countries and territories, 1990-2016. *www.thelancet.com*. 2019;393:1101. doi:10.1016/S0140-6736(18)32427-9
8. Sacks D, Westwood M. An Approach To Interviewing Adolescents. *Paediatr Child Heal*. 2003;8(9):554-556.
9. World Health Organisation. Stages of adolescent development. World Health Organization. http://apps.who.int/adolescent/second-decade/section/section_2/level2_2.php. Published 2010. Accessed August 20, 2019.
10. Hacettepe University Institute of Population Studies. *The 2013 Turkey Demographic and Health Survey*. Hacettepe University; 2014.

11. Ham P, Allen C. Adolescent health screening and counseling. *Am Fam Physician*. 2012;86(12):1109-1116. http://www.ncbi.nlm.nih.gov/pubmed/23316983. Accessed April 17, 2019.
12. Cullu F, Vural M. An Overview on Child Health Care in Turkey. *J Pediatr*. 2016;177:S213-S216. doi:10.1016/j.jpeds.2016.04.057
13. Daley AM, Polifroni EC, Sadler LS. "Treat Me Like a Normal Person!" A Meta-Ethnography of Adolescents' Expectations of Their Health Care Providers. *J Pediatr Nurs*. 2017;36:70-83. doi:10.1016/j.pedn.2017.04.009
14. Irwin CE, Adams SH, Park MJ, Newacheck PW. Preventive care for adolescents: few get visits and fewer get services. *Pediatrics*. 2009;123(4):e565-72. doi:10.1542/peds.2008-2601
15. Nordin JD, Solberg LI, Parker ED. Adolescent Primary Care Visit Patterns. *Ann Fam Med*. 2010;8(6):511-516. doi:10.1370/AFM.1188
16. Spencer N, Raman S, O'Hare B, Tamburlini G. Addressing inequities in child health and development: towards social justice. *BMJ Paediatr Open*. 2019;3(1):e000503. doi:10.1136/bmjpo-2019-000503
17. Tang C, Xu J, Zhang M. The choice and preference for public-private health care among urban residents in China: evidence from a discrete choice experiment. *BMC Health Serv Res*. 2016;16(1):580. doi:10.1186/s12913-016-1829-0
18. Turkey Statistical Institute. Mortality rates, 2017. Turkey Statistical Institute. http://www.tuik.gov.tr/PreHaberBultenleri.do?id=27592. Published 2017. Accessed August 22, 2019.
19. Jansen D, Saxena S, Azzopardi-Muscat N. Public Health Practice and Policy to Improve Child and Adolescent Health in Europe. *J Pediatr*. 2017;190:293-294.e2. doi:10.1016/j.jpeds.2017.07.043
20. Broder KR, Cohn AC, Schwartz B, et al. Adolescent immunizations and other clinical preventive services: a needle and a hook? *Pediatrics*. 2008;121 Suppl(Supplement 1):S25-34. doi:10.1542/peds.2007-1115D
21. Sözen F, Aydemir S, Kut A, Özbakır Z, Eminsoy G. Periodic Health Examination Knowledge, Attitudes and Behavior among Primary Care Physicians: A Descriptive Study of Preventive Care in Turkey. *Turkish J Fam Med Prim Care*. December 2019:418-426. doi:10.21763/tjfmpc.634371
22. Ünal B, Ergör G, Dinç Horasan G, Kalaça S, Sözmen K. *Türkiye Kronik Hastalıklar ve Risk Faktörleri Çalışması*. (Ünal B, Ergör G, eds.). Ankara: T.C. Sağlık Bakanlığı; 2013. www.thsk.gov.tr. Accessed June 23, 2020.
23. Elster AB. Comparison of recommendations for adolescent clinical preventive services developed by national organizations. *Arch Pediatr Adolesc Med*. 1998;152(2):193-198. http://www.ncbi.nlm.nih.gov/pubmed/9491048. Accessed August 24, 2019.
24. Crossen K. Missed opportunities for adolescent friendly care in hospital. *J Paediatr Child Health*. 2017;53(12):1176-1179. doi:10.1111/jpc.13626
25. Mihalopoulos NL, Stipelman C, Hemond J, Brown LL, Young PC. Universal Lipid Screening in 9- to 11-Year-Olds Before and After 2011 Guidelines. *Acad Pediatr*. 2018;18(2):196-199. doi:10.1016/j.acap.2017.11.006
26. *Preventing Early Pregnancy and Poor Reproductive Outcomes Among Adolescents in Developing Countries*.; 2011. https://www.who.int/immunization/hpv/target/preventing_early_pregnancy_and_poor_reproductive_outcomes_who_2006.pdf. Accessed August 25, 2019.
27. David-Ferdon C, Simon TR. *Preventing Youth Violence: Opportunities for Action*. Atlanta: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2014.
28. *WHO | Global Strategy for Women's, Children's and Adolescent's Health & Every Woman Every Child Initiative*. World Health Organization; 2019. https://www.who.int/life-course/partners/global-strategy/en/. Accessed August 25, 2019.
29. Chapman L, Edbrooke-Childs J, Martin K, et al. A Mobile Phone App to Support Young People in Making Shared Decisions in Therapy (Power Up): Study Protocol. *JMIR Res Protoc*. 2017;6(10):e206. doi:10.2196/resprot.7694
30. Kuruvilla S, Bustreo F, Kuo T, et al. The Global strategy for women's, children's and adolescents' health (2016–2030): a roadmap based on evidence and country experience. *Bull World Health Organ*. 2016;94(5):398. doi:10.2471/BLT.16.170431
31. Turkish General Directorate on the Status of Women. *Domestic Violence against Women in Turkey*. Ankara; 2009. www.ksgm.gov.tr.
32. WHO | Causes of death among adolescents. *WHO*. 2018. https://www.who.int/maternal_child_adolescent/data/causes-death-adolescents/en/. Accessed September 6, 2019.
33. Kennedy EC, Bulu S, Harris J, Humphreys D, Malverus J, Gray NJ. These issues aren't talked about at home: a qualitative study of the

sexual and reproductive health information preferences of adolescents in Vanuatu. *BMC Public Health*. 2014;14(1):770. doi:10.1186/1471-2458-14-770

34. Fleary SA, Joseph P, Pappagianopoulos JE. Adolescent health literacy and health behaviors: A systematic review. *J Adolesc*. 2018;62(November 2017):116-127. doi:10.1016/j.adolescence.2017.11.010
35. Duncan LR, Pearson ES, Maddison R. Smoking prevention in children and adolescents: A systematic review of individualized interventions. *Patient Educ Couns*. 2018;101(3):375-388. doi:10.1016/j.pec.2017.09.011
36. Lempp T, Heinzel-Gutenbrunner M, Bachmann C. Child and adolescent psychiatry: which knowledge and skills do primary care physicians need to have? A survey in general practitioners and paediatricians. *Eur Child Adolesc Psychiatry*. 2016;25(4):443-451. doi:10.1007/s00787-015-0757-6
37. Haller DM, Favrod-Coune T, Dvorák C, Herzig L. Prevention of binge drinking in adolescents: do family doctors have a role to play? *Rev Med Suisse*. 2014;10(430):1062, 1064-1067. http://www.ncbi.nlm.nih.gov/pubmed/24930152. Accessed March 19, 2019.
38. Pinsonneault L, Déry V. Family physicians and treatment of pediatric obesity: findings drawn from the creation of clinical practice guidelines. *Can Fam Physician*. 2012;58(5):e238, 502. http://www.ncbi.nlm.nih.gov/pubmed/22734166. Accessed March 19, 2019.
39. Karabulutlu Ö, Kılıç M. Üniversite Öğrencilerinin Cinsel Sağlık Ve Üreme Sağlığı Hakkındaki Bilgi Düzeylerinin Belirlenmesi. *Anadolu Hemşirelik ve Sağlık Bilim Derg*. 2011;14(2):39-45. https://dergipark.org.tr/download/article-file/29495. Accessed August 20, 2019.