

**Avedisian Onanian Center *for* Health
Services Research & Development**

Entrepreneurs *in* Health
(EIH) Program

2023 Annual Report



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Introduction

In 2006, Gerald Turpanjian, renowned philanthropist, trustee emeritus, and long-time benefactor of the American University of Armenia (AUA), donated \$5 million to the University to stimulate and promote rural economic development. The donation served as an impetus to establish the Turpanjian Rural Development Program (TRDP), which aims to provide education and entrepreneurship opportunities to people living in the rural communities of the Republic of Armenia, Republic of Artsakh, and Samtskhe-Javakheti (Javakhk) region in the Republic of Georgia.

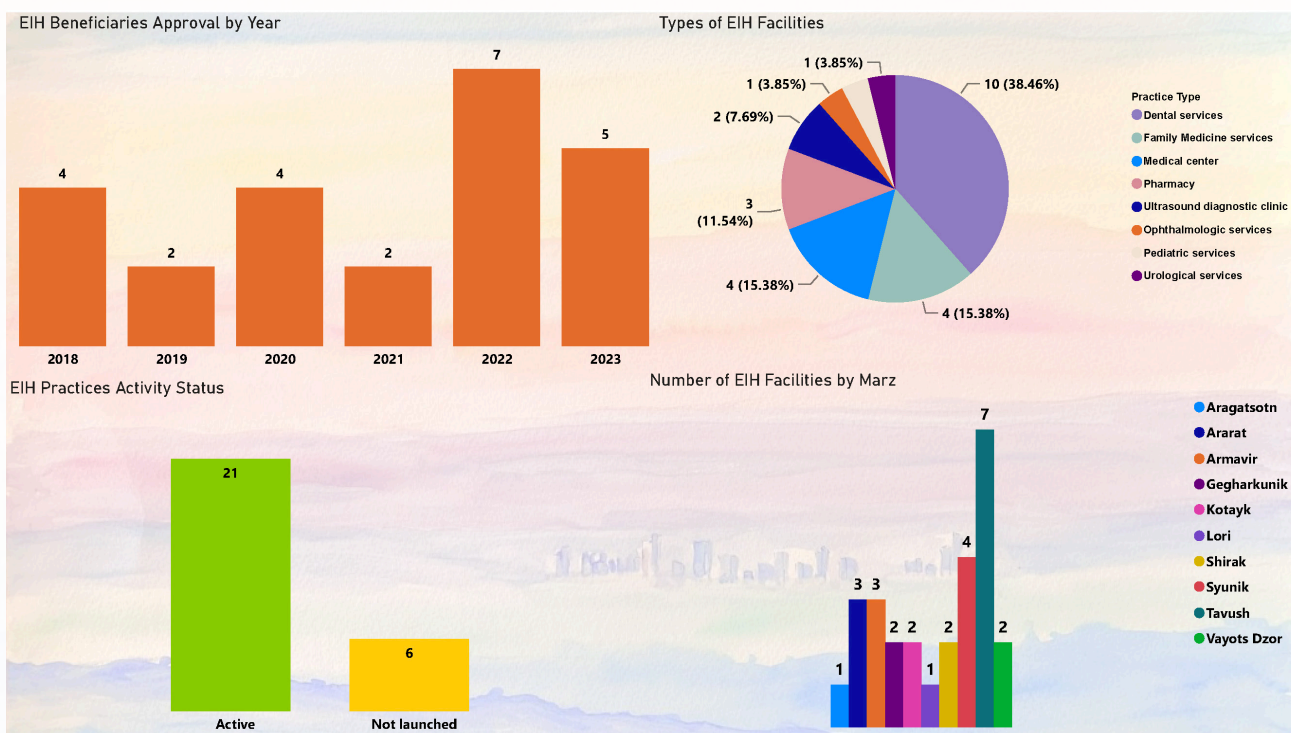
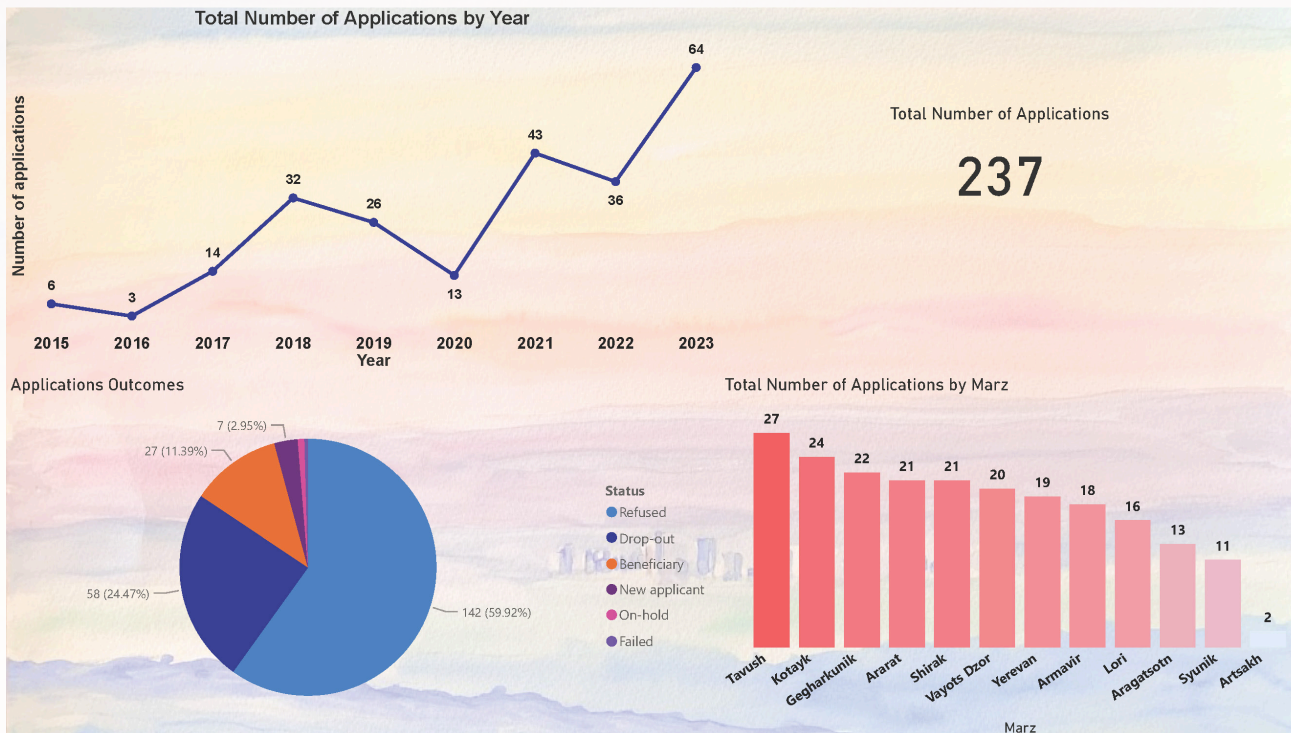
A decade later, the expressed interest of TRDP applicants and growing need for local private practices in healthcare served as key drivers for establishing the Entrepreneurs in Health (EIH) program. EIH was launched by the AUA Turpanjian College of Health Sciences (CHS) and seeks to increase access to quality health services in Armenia's rural communities and regional small towns by supporting the establishment and/or expansion of private health care practices.

The main components of the EIH program include:

- Provision of free-of-charge education in health care quality assurance, entrepreneurship, accounting, and preventive dentistry (for dentist beneficiaries);
- Arrangement for successful graduates to receive low interest (5%) loans from a local bank;
- Continuous coaching and professional support;
- Assistance in continuous professional education;
- Collaboration with Diaspora professionals;
- Monitoring and evaluation of established private practices;
- Additional support to applicants from border communities;
- Community-based public health projects;

This report depicts the activities the EIH program carried out in the year 2023 and its key accomplishments, which also reflect the successful entrepreneurship of program beneficiaries.

1. EIH Statistics at a Glance as of December 2023



2. EIH Educational Component

During the year 2023, the EIH program had two groups of applicants, who took part in the EIH Educational Component, which combined the 60-hour Entrepreneurship Skills and 48-hour Basics of Healthcare Quality Assurance Management courses. The course on Quality of Healthcare provided 44 Continuous Professional Development (CPD) Credits, approved by the Republic of Armenia Ministry of Health (MOH), to participants. The classes were mainly held online, with a small number of offline sessions.



First group of 2023 EIH applicants



Meeting of the first group of applicants with EIH Chair Dr. Haroutune Armenian



Online course on Quality of Healthcare

The first group of applicants took their courses from March 14-June 6, 2023. Eight participants with six business ideas were enrolled. Seven participants successfully completed the course and five of them presented their business plans and quality assurance plans to the Committee of Experts.



Presentation of business plans by the first group of 2023 applicants to the Committee of Experts

The EIH Educational Component for the second group of 2023 applicants was held from September 12 to December 1, 2023, after which the participants presented their business plans and quality assurance plans to the Experts. In total, seven applicants were enrolled, and five of them successfully completed the combined courses.



Second group of 2023 EIH applicants



Offline session of Entrepreneurship Skills course



Presentations of quality assurance plans



Presentations of business plans

2.1. Training on Preventive Stomatology

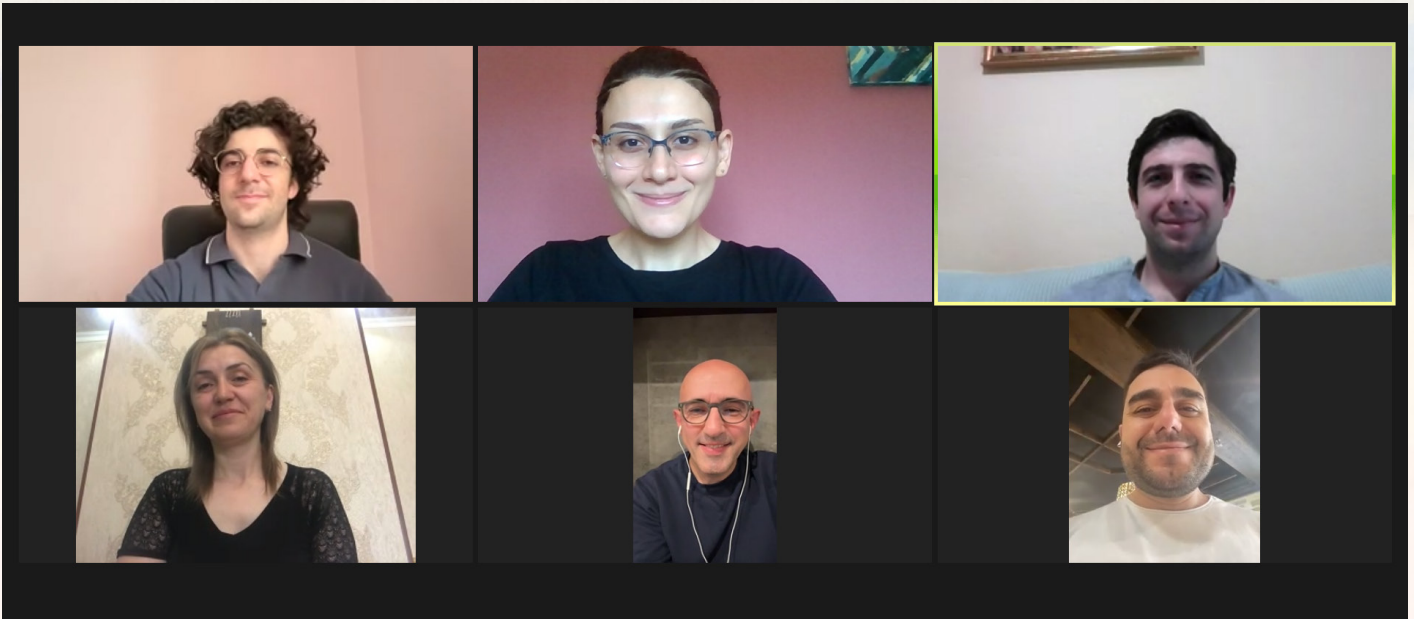
On January 21, 2023, EIH organized a 7-hour training on Preventive Stomatology for EIH dentist beneficiaries and their employees. The course provided five CPD Credits approved by Armenia's MOH.



Preventive Stomatology course for EIH dentist beneficiaries and their employees

3. EIH Mentorship Component

The Mentorship Component targets the professional development of rural physicians through collaboration with mentors: Diaspora physicians with the same specialization. The EIH Mentorship Component includes periodic meetings with mentors, as well as discussions on various professional topics and clinical cases. In 2023, in addition to dentists and internists/family physicians, EIH began offering this opportunity to cardiologist beneficiaries as well.



The first EIH Cardiology Mentorship Meeting

4. EIH Events

4.1. Informative Events

In 2023, EIH organized seven informative events: two webinars on the topic “Become an Entrepreneur in Health” and five offline events covering the CHS health programs conducted in collaboration with AUA Extension’s regional offices in Vanadzor, Dilijan, Yeghegnadzor, Gyumri, and Kapan.



The first EIH Cardiology Mentorship Meeting

4.2. Public Lecture by Dr. Roza Selimyan

On July 19, CHS Visiting Professor Dr. Roza Selimyan gave a public lecture on “The Role of Genetics and Epigenetics in Modern Medicine.” In her talk, Dr. Selimyan delved into the human genome’s evolution and organization, as well as the significant impact of the Human Genome Project on advancing modern medicine and science. She also spoke about the concept of epigenetics and the study of changes in gene function not caused by DNA sequence alterations. This new field of research, along with genetics and molecular biology, enables the prediction of certain diseases before their onset and the adoption of a prevention-driven approach that holds the potential to save millions of lives.



Public lecture by Dr. Roza Selimyan

4.3. Meeting With EIH Beneficiaries

On April 28, 2023, an in-person meeting was organized between EIH Chair and AUA President Emeritus Dr. Haroutune Armenian and program staff and beneficiaries from across Armenia. The points of discussion included EIH’s role in the practices of beneficiaries, general program progress throughout the years since its founding, and vision for change. Opinions and suggestions were exchanged during the meeting.



Meeting with EIH beneficiaries

5. EIH Research

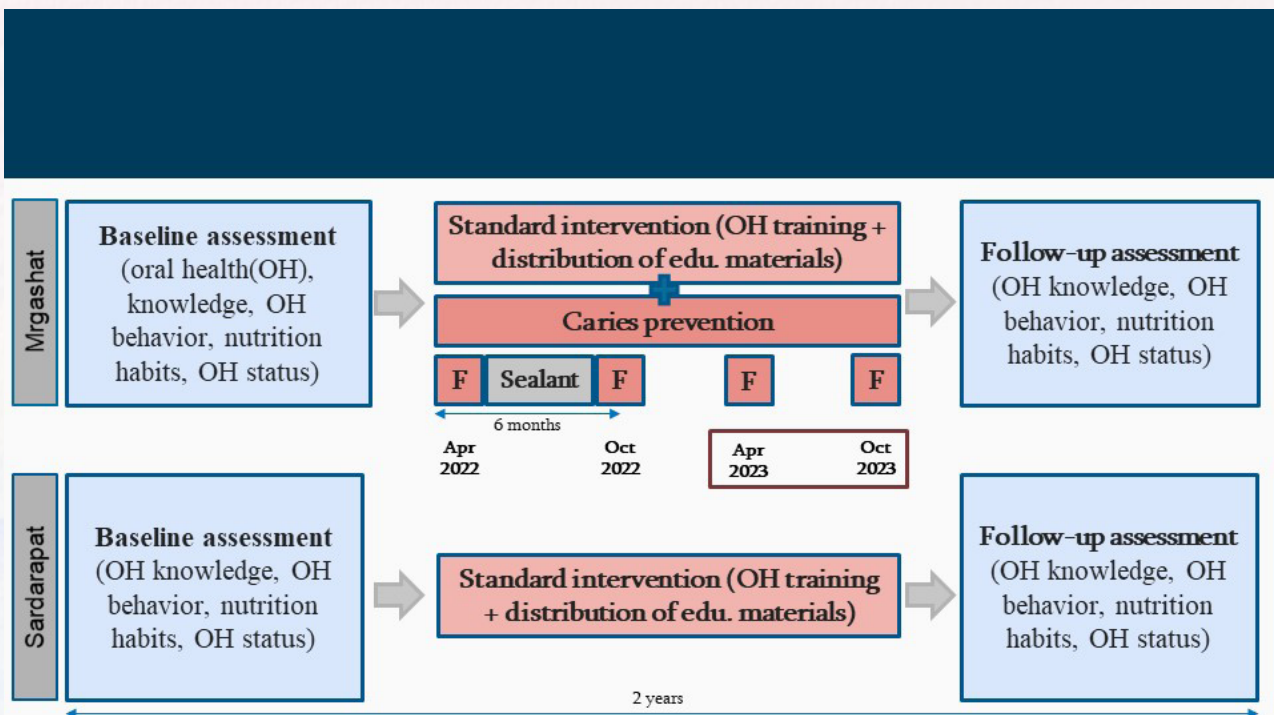
5.1. EIH Preventive Dentistry Program

The EIH Preventive Dentistry program was initiated in 2022 in the Mrgashat and Sardarapat communities and included oral hygiene awareness-raising activities in both communities and caries-prevention among primary schoolchildren in Mrgashat.

To demonstrate the effectiveness of the EIH Preventive Dentistry program, EIH researchers launched an evaluation study utilizing quasi-experimental nonequivalent intervention 1 and 2 group design with two study waves conducted with an interval of two years, aiming:

- To evaluate the effectiveness of oral health awareness-raising intervention in the Mrgashat and Sardarapat communities and caries preventive intervention in the Mrgashat community in improving DMFT/dmft scores among primary schoolchildren in the rural community through baseline, and two years of follow-up measurements of the oral health status (DMFT/dmft scores) of primary schoolchildren and the self-reported oral health knowledge and behavior of their parents in both communities.
- To estimate the prevalence of plaque, as well as DMFT/dmft indices among primary schoolchildren in the rural communities of Mrgashat and Sardarapat, Armenia.
- To identify determinants associated with the presence and severity of plaque, as well as DMFT/dmft scores among primary schoolchildren in the rural communities of Mrgashat and Sardarapat, Armenia.

The baseline assessment in 2022 included a researcher-administered telephone survey on oral health knowledge and practice among parents of primary schoolchildren in intervention 1 and 2 communities, as well as clinical examinations of the oral health of primary schoolchildren of intervention 1 and 2 communities using standardized oral health assessment methods to calculate the DMFT index (number of decayed, missing, and filled teeth) and plaque index (demonstrating the presence of plaque covering the six surfaces of a tooth).

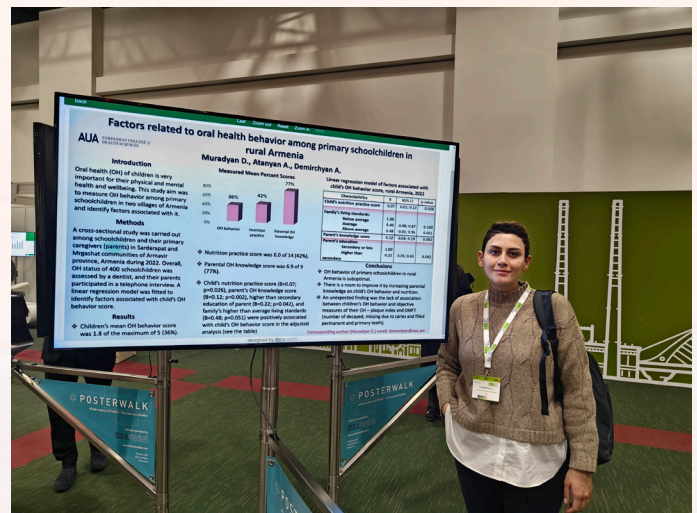


The intervention started in 2022 and included 1) 22 training sessions in the two schools of Mrgashat and the only school of Sardarapat, 2) sealant application on children's eligible teeth to prevent cavities (in Mrgashat only), and 3) fluoridation of children's teeth conducted once every six months (in Mrgashat only). During the year 2023, fluoridation of participants' teeth was conducted twice, in April and October 2023. The follow-up assessment of the study is planned for April 2024.

5.2. Participation in 16th European Public Health Conference

Two abstracts from the baseline phase of the Preventive Dentistry Program's evaluation study were accepted to the 16th European Public Health Conference, held on November 8-11, 2023 in Dublin, Ireland (see appendix). The accepted abstracts were the following:

- Atanyan A, Muradyan D, Mkrtchyan M, Karbouian K, Paranjkhoo P, Yeretian S, Lylozian H, Demirchyan A. Parental oral health knowledge and plaque index of their children in rural communities of Armenia. The European Journal of Public Health. 2023, 33(2). Doi: 10.1093/eurpub/ckad160.785
- Muradyan D, Atanyan A, Demirchyan A. Factors related to oral health behavior among primary schoolchildren in rural Armenia. The European Journal of Public Health. 2023, 33(2). Doi: 10.1093/eurpub/ckad160.1400



Participation in 16th European Public Health Conference, Dublin, Ireland

6. New EIH Beneficiaries in 2023

During the year 2023, EIH approved the following applicants to become beneficiaries and obtain assistance through the various components of the program.

- Elvira Margaryan: Pharmacy, Jajur, Shirak
- Dr. Armen Aleksanyan: Urology services, Martuni, Gegharkunik
- Dr. Ani Mrtchyan: Medical Center, Armavir, Armavir
- Dr. Arshak Margaryan: Cardiology services, Ijevan, Tavush
- Dr. Tigran Margaryan: Ophthalmology services, Kapan, Syunik

7. Opening Ceremonies

Establishment of Dental Clinic and Expansion of Cardiology Diagnostic Services in Noyemberyan



Dr. Guram Aghababyan, a dentist and maxillofacial surgeon, and Dr. Manush Gishyan, a cardiologist, are health entrepreneurs from Noyemberyan. Both Drs. Aghababyan and Gishyan completed the mandatory Educational Component of the EIH program. They developed the business and quality assurance plans for their respective clinics and received the approval of the EIH Executive Committee following their presentation. As a result, they qualified for financial assistance to procure necessary equipment and secured the program's support for their continuous professional development.

Dr. Gishyan had previously run a private cardiology clinic and expanded her practice's services with EIH assistance, while Dr. Aghababyan received support to launch his new dental clinic. His clinic officially opened on July 31, 2023 with an inaugural event that gathered community leaders, colleagues from regional health facilities, relatives, friends, and EIH program representatives.

The EIH program will continue to support Drs. Gishyan and Aghababyan by offering them professional development assistance, mentorship by medical experts from the Diaspora, and consultations in healthcare quality, preventive dentistry, operational and financial management, and other relevant fields.

Appendix:

Posters of two abstracts presented during the 16th European Public Health Conference in Dublin, Ireland.

Parental oral health knowledge and plaque index of their children in rural communities of Armenia

A. Atanyan,* D. Muradyan; M. Mkrtchyan; K. Karbouian; S.T. Yeretzyan; P. Paranjkhoo; H. Lylozian; A. Demirchyan

AUA American University of Armenia
TURPANJIAN COLLEGE of HEALTH SCIENCES

Introduction

While the prevalence of oral diseases in high-income countries is decreasing, the opposite is true for low- and middle-income countries. Parental awareness about oral health has been shown to be an important contributor to child's oral health. This study evaluated the relation between oral health knowledge of parents and oral health status of their children aged 6-10 years in two rural communities in Armavir province, Armenia.

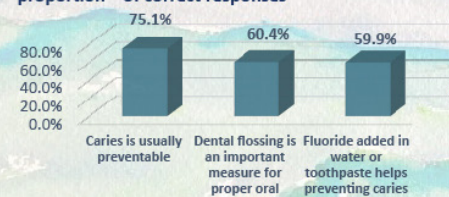
Methods

This cross-sectional study included two main components: telephone survey among parents measuring their oral health knowledge, socio-demographic and child's behavioral variables, and clinical examination of children's oral health status. Multivariable linear regression analysis was used to identify the association between parental oral health knowledge score and children's oral health measured by plaque index.

Results

- ❖ The mean plaque index among children (valid n=385) was 3.1 (of the maximum 5.0), demonstrating abundant coverage of their teeth with plaque.
- ❖ The mean oral health knowledge score among parents (n=400) was 6.9 (of the maximum 9.0), indicating above-average oral health awareness.
- ❖ There was negative association between parental oral health knowledge score and children's plaque index ($B=-0.24$, $p=0.039$), when controlling for other significant variables.

Parental knowledge items with the lowest proportion of correct responses



Linear regression model of factors associated with oral health knowledge score of parents of schoolchildren

| Characteristics | β | 95% CI | P-value |
|--------------------------------------|---------|--------------|---------|
| Child's plaque index | -0.24 | -0.47; -0.01 | 0.039 |
| Child's eating habit score | 0.10 | 0.01; 0.19 | 0.031 |
| Child's birth order: First/second | Ref. | | |
| Third or higher | -0.46 | -0.84; -0.09 | 0.016 |
| Child's weight: Normal weight | Ref. | | |
| Underweight | -0.23 | -0.61; 0.15 | 0.232 |
| Overweight | -0.75 | -1.25; -0.26 | 0.003 |
| Parent's education: \leq Secondary | Ref. | | |
| > Secondary | 0.34 | 0.03; 0.65 | 0.033 |

Conclusion

- ❖ In two rural communities of Armenia, there was a clear link between parental oral health knowledge score and oral health of their primary schoolchildren measured by plaque index.
- ❖ Well-focused educational interventions on oral health targeting parents of primary schoolchildren combined with children's better access to preventive dental care are recommended for improving their oral health.

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Factors related to oral health behavior among primary schoolchildren in rural Armenia

AUA TURPANJIAN COLLEGE of HEALTH SCIENCES

Muradyan D., Atanyan A., Demirchyan A.

Introduction

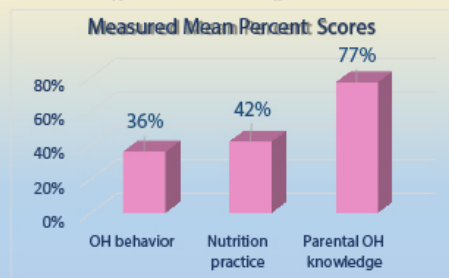
Oral health (OH) of children is very important for their physical and mental health and wellbeing. This study aim was to measure OH behavior among primary schoolchildren in two villages of Armenia and identify factors associated with it.

Methods

A cross-sectional study was carried out among schoolchildren and their primary caregivers (parents) in Sardarapat and Mrgashat communities of Armavir province, Armenia during 2022. Overall, OH status of 400 schoolchildren was assessed by a dentist, and their parents participated in a telephone interview. A linear regression model was fitted to identify factors associated with child's OH behavior score.

Results

- ☒ Children's mean OH behavior score was 1.8 of the maximum of 5 (36%).



- ☒ Nutrition practice score was 6.0 of 14 (42%).
- ☒ Parental OH knowledge score was 6.9 of 9 (77%).
- ☒ Child's nutrition practice score ($B=0.07$; $p=0.026$), parent's OH knowledge score ($B=0.12$; $p=0.002$), higher than secondary education of parent ($B=0.22$; $p=0.042$), and family's higher than average living standards ($B=0.48$; $p=0.051$) were positively associated with child's OH behavior score in the adjusted analysis (see the table).

Linear regression model of factors associated with child's OH behavior score, rural Armenia, 2022

| Characteristics | B | 95% CI | p-value |
|----------------------------------|------|-------------|---------|
| Child's nutrition practice score | 0.07 | 0.01; 0.13 | 0.026 |
| Family's living standards: | | | |
| Below average | 1.00 | | |
| Average | 0.40 | -0.08; 0.87 | 0.100 |
| Above average | 0.48 | -0.01; 0.96 | 0.051 |
| Parent's knowledge score | 0.12 | 0.04; 0.19 | 0.002 |
| Parent's education: | | | |
| Secondary or less | 1.00 | | |
| Higher than secondary | 0.22 | 0.01; 0.43 | 0.042 |

Conclusions

- ☒ OH behavior of primary schoolchildren in rural Armenia is suboptimal.
- ☒ There is a room to improve it by increasing parental knowledge on child's OH behavior and nutrition.
- ☒ An unexpected finding was the lack of association between children's OH behavior and objective measures of their OH – plaque index and DMFT (number of decayed, missing due to caries and filled permanent and primary teeth).

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