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ZVART AVEDISIAN ONANIAN CENTER FOR HEALTH SERVICES RESEARCH AND DEVELOPMENT

GERALD AND PATRICIA TURPANJIAN SCHOOL OF PUBLIC HEALTH

Garo Meghrigian Institute for Preventive Ophthalmology

2016 Annual Report



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Executive Summary

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Center for Health Services Research and Development (CHSR) at AUA's Gerald and Patricia Turpanjian School of Public Health. Meghriqian Institute's mission is to prevent avoidable blindness in Armenia.

This Annual Report highlights the main activities and accomplishments of the Meghriqian Institute in 2016.

In April 2016, Meghriqian Institute launched its annual eye screening program among socially vulnerable children. The staff of the Meghriqian Institute visited Achapnyak Social Care Center which currently serves 105 school age children. Ninety two children participated in detailed eye screenings. Thirty two children were found to suffer from eye disorders.

On October 13, Meghriqian Institute distributed 324 eye glasses to the beneficiaries of the Center for Social Services for Single Elderly and Disabled People in Yerevan to celebrate World Sight Day 2016.

Between July and October 2016, Meghriqian Institute conducted eye screenings among people who live in Vardenis Neuropsychological Retirement Home, which currently serves around 430 people. Two hundred ninety-nine people were able to participate in the screenings. Refractive errors were found in 110 participants who received 120 free eye glasses from the Meghriqian Institute.

In December 2016, Meghriqian Institute screened 76 and 31 beneficiaries of the Armenian Caritas Day Care Centers for Elderly in Gyumri and Gavar, respectively. The beneficiaries received 100 eye glasses from the Institute.

Meghriqian Institute conducted a 4-day training on "*Ophthalmic Diseases, Modern Diagnostic and Treatment Methods*" among ophthalmologists and a 2-day training on "*Prevention, Diagnosis and Treatment of Ophthalmic Diseases*" among ophthalmic nurses from nine marzes

of Armenia in October and November 2016. All participants received certificates in recognition of successful completion of the training course and continuing medical education credits from the Minister of Health.

In August 2016, Garo Meghriyan Institute for Preventive Ophthalmology launched eye screening among patients with diabetes living in Tavush region of Armenia. The staff of the Meghriyan Institute visited the main cities of Tavush region (Dilijan, Ijevan, Berd and Noyemberyan) and their adjacent villages between August and December, 2016. A total of 449 diabetics were screened and around one thousand brochures/booklets on diabetes management and complications, including diabetic retinopathy and its prevention were distributed to them.

In October 2016, the Meghriyan Institute organized eye screenings aimed at reducing the incidence of avoidable blindness and visual impairment among school children living in Berdzor, Tsaghkaber, Urekan and Martunashen towns/villages of Kashatagh province of Artsakh. Overall, 503 children participated in the screening.

In 2016, the Meghriyan Institute published a research article “Risk Factors for Developing Myopia among Schoolchildren in Yerevan and Gegharkunik province, Armenia” in the peer-reviewed journal of Ophthalmic Epidemiology.

The research team of the Meghriyan Institute presented the study on “*Vision related quality of life among adult population living in Nagorno Karabagh*” to the European Public Health Conference in Vienna, Austria held in November 2016. The abstract was published in the European Journal of Public Health in 2016.

In 2016, Meghriyan Institute organized outreach visits to different regions of Armenia and Artsakh. These visits helped to detect eye pathologies among those who have low access to ophthalmic services. In total, 346 adult patients underwent ophthalmic examinations from Yerevan, Gegharkunik, Tavush and Shirak regions, and from Kashatagh.

The Meghriyan Institute continued its partnership with the Lions Regional Ophthalmic Unit in Sevan, established earlier through the joint efforts of the Meghriyan Institute and the Ararat Lions Club (ALC), and funded by the Lions Club International Foundation-LCIF.

In total, Meghriyan Institute provided eye screenings to 595 children and 1,583 adult patients in Armenia and Artsakh, and distributed 549 free eye glasses to the population in need in 2016.

Introduction

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Center for Health Services Research and Development (CHSR) at AUA's School of Public Health. In partnership with local experts, the Meghriqian Institute seeks to assess and characterize the burden of eye diseases in Armenia, to promote preventive measures such as screenings, to develop professional and public awareness through educational programs, and to help increase the local health system's capacity to effectively identify and prevent vision disorders before they lead to blindness.

The main objectives of the Meghriqian Institute are to:

- Conduct scientific investigations of ophthalmic epidemiology to increase understanding of eye disease in the community;
- Link ophthalmologic services with expertise in organizing, financing and delivery of services to increase the utilization of ophthalmologic care in Armenia;
- Educate eye care providers and the general public on scientific advances in detecting, preventing, and treating eye disease and in translating these advances into nationwide clinical practice;
- Establish an ophthalmic care and prevention network to expand service delivery to underserved populations in need of affordable, accessible, and high quality eye care services for prevention and treatment of blindness at all levels;
- Develop partnerships with organizations that are interested in blindness prevention and are capable of furthering the achievements of Meghriqian Institute's goal;
- Train the future professionals for blindness prevention activities in Armenia;
- Establish a regional blindness prevention network for the Caucasus, emphasizing underserved areas and minority populations.

Since 2004, the Meghriqian Institute has also been sponsoring a fellowship program to encourage Armenian ophthalmologists to combine population-based prevention activities with clinical ophthalmology, as part of the Master of Public Health program at AUA.

Vision loss, or blindness, is a major public health problem. The leading causes of chronic blindness include cataract, glaucoma, age-related macular degeneration, corneal opacities and diabetic retinopathy. Blindness decreases quality of life and has a great impact on the socio-economic development of individuals and society. The Meghri Institute's activities include eye screenings and treatment for socially vulnerable children and the elderly living in retirement homes and border villages; delivering educational programs to ophthalmologists, ophthalmic nurses, endocrinologists, primary health care providers, and school nurses working in rural areas of Armenia; donating ophthalmic equipment to ophthalmic offices of primary care facilities; and establishing a high quality ophthalmic services, such as the Lions Regional Ophthalmic Unit, established in Sevan, Gegharkunik province. The Meghri Institute founded this unit in partnership with the Ararat-1 Lions Club and with funding from the Lions Club International Foundation. It is a first step in expanding affordable, accessible, and high quality ophthalmic service delivery to underserved populations, and serves as a model regional ophthalmic system in Gegharkunik province. The Unit has served around 30,867 people and performed 3,441 surgeries for free or at a cost much lower than in Yerevan. In addition, the Meghri Institute has conducted eye screenings among socially disadvantaged children and adults in Armenia and Artsakh, and ophthalmic research among different population groups, including people with cataract surgery and with diabetes.

This report highlights the main activities and accomplishments of the Meghri Institute in 2016.

Activities and accomplishments

1. Meghriyan Institute Completed Eye Screening Among School Age Children Living in Achapnyak Social Care Center

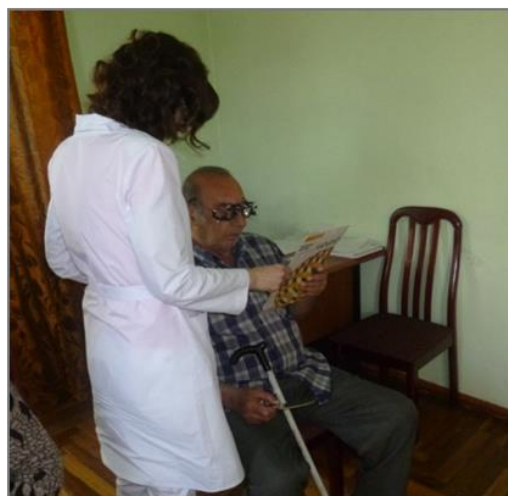
In April 2016, Meghriyan Institute launched its annual eye screening program among socially vulnerable children. The staff of the Meghriyan Institute visited Achapnyak Social Care Center which currently serves 105 children of school age. Ninety two children participated in detailed eye screenings. Thirty two children were found to suffer from eye disorders. Twenty children were diagnosed with refractive errors such as nearsightedness, farsightedness, and astigmatism. Five children were prescribed eye glasses which were distributed to them for free by the Meghriyan Institute. Nine children diagnosed with eye diseases including infection, allergic conjunctivitis, accommodation spasm, and meibomitis received medical assistance from the Meghriyan Institute. Those who had other eye conditions such as strabismus, iris melanosis and congenital cataract were referred to specialized centers for more detailed examination.



2. Garo Meghriyan Institute for Preventive Ophthalmology Celebrated World Sight Day 2016

On October 13, Meghriyan Institute distributed eye glasses to the beneficiaries of the Center for Social Services for Single Elderly and Disabled People in Yerevan to celebrate World Sight Day 2016. World Sight Day (WSD) is an annual day of awareness held on the second Thursday of October to focus global attention on blindness and vision impairment. In 2016, the call to action for WSD was “Stronger Together.”

The staff of the Meghriyan Institute screened 382 beneficiaries of the Center for Social Services for Single Elderly and Disabled People between May and October 2016. The mean age of participants was 74 years ranging from 21 to 95. Women constituted the majority of the beneficiaries (86.4%). Refractive errors such as nearsightedness, farsightedness, astigmatism, and presbyopia were found in 332 participants. Other eye conditions such as infections, allergic conjunctivitis, cataract, glaucoma, diabetic angiopathy, hypertonic retinopathy and macular degeneration were diagnosed in 310 patients. All patients with eye problems received free ophthalmic consultation, medical treatment prescription, and 324 free eye glasses from the Meghriyan Institute.



3. Garo Meghriyan Institute for Preventive Ophthalmology Worked with Vardenis Neuropsychological Retirement Home in Gegharkunik

In October 2016, Meghriyan Institute completed eye screenings among people who live in Vardenis Neuropsychological Retirement Home, which currently serves around 430 people. Two hundred ninety-nine people were able to participate in the detailed eye screenings. Women constituted the majority of participants (57.2%). Refractive errors such as nearsightedness, farsightedness, astigmatism, and presbyopia were found in 110 participants. Meghriyan Institute distributed 120 free eye glasses to them. Other eye conditions such as infections, allergic conjunctivitis, cataract, glaucoma, diabetic angiopathy, hypertonic retinopathy and macular degeneration were diagnosed in 160 patients. All patients with eye diseases received free ophthalmic consultation and medical treatment prescription from the Meghriyan Institute. Five patients with mature and over mature cataract, who needed cataract surgery, were referred to the Sevan Lion's Regional Ophthalmic Unit (ROU) for free eye surgeries. Three patients with overmature cataract received the surgery at Sevan ROU in October, 2016, and two patients with mature cataract will get the cataract surgery in 2017.



4. Garo Meghriqian Institute for Preventive Ophthalmology served Armenian Caritas Day Care Centers for Elderly in Gyumri and Gavar

In December 2016, Garo Meghriqian Institute for Preventive Ophthalmology distributed 100 eye glasses to the beneficiaries of the Armenian Caritas Day Care Centers for the Elderly in Gyumri and Gavar cities. The staff of the Meghriqian Institute screened 76 and 31 beneficiaries of the Armenian Caritas Day Care Centers for Elderly in Gyumri and Gavar, respectively, in late fall 2016. Women constituted the majority of the beneficiaries (84.1%). Refractive errors such as nearsightedness, farsightedness, astigmatism, and presbyopia were found in 89 participants. Other eye conditions such as infections, allergic conjunctivitis, cataract, glaucoma, diabetic angiopathy, hypertonic retinopathy and macular degeneration were diagnosed in 103 patients. All patients with eye problems received free ophthalmic consultation, medical treatment prescription, and free eye glasses from the Meghriqian Institute.



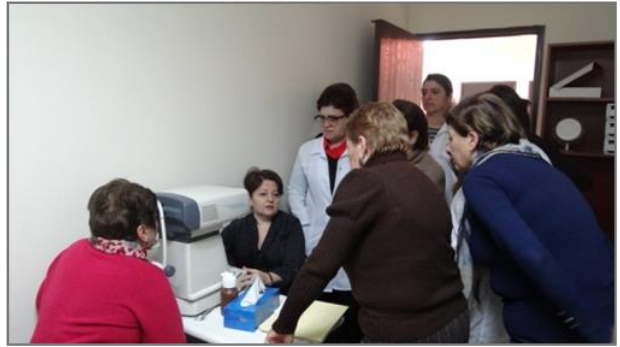
5. Meghriqian Institute Conducted Ophthalmic Trainings for Ophthalmologists and Ophthalmic Nurses from Nine Marzes of Armenia

Garo Meghriqian Institute for Preventive Ophthalmology conducted a 4-day training on “*Ophthalmic Diseases, Modern Diagnostic and Treatment Methods*” among ophthalmologists and a 2-day training on “*Prevention, Diagnosis and Treatment of Ophthalmic Diseases*” among ophthalmic nurses from nine marzes of Armenia in October and November 2016. This project has been implemented to fulfill the mission of Meghriqian Institute to educate health providers and establish an ophthalmic care and prevention network to expand service delivery to under-served populations in Armenia.

The training course provided knowledge and skills in the area of eye disease prevention, diagnosis and treatment methods. The course for ophthalmologists covered anatomy and physiology of eyes, refractive errors, main eye diseases, and current methods in diagnostic and treatment procedures, with a particular focus on cataract, glaucoma and diabetic retinopathy, while the course for ophthalmic nurses covered main eye diseases, eye injuries, diagnostic and treating procedures in ophthalmology and prevention of eye diseases.

Dr. Varsik Hakobyan, an Ophthalmic Consultant at Meghriqian Institute and an experienced practicing ophthalmologist, conducted the trainings. Twenty two ophthalmologists and twenty five ophthalmic nurses from nine marzes participated in the training. The Ministry of Health accredited the training curricula and designated 14 theoretical and two practical continuing medical education (CME) credits for the ophthalmologists’ training and eight theoretical CME credits for the ophthalmic nurses’ training. All participants received certificates in recognition of successful completion of the training course and credits signed by the Minister of Health in December. The theoretical part of the trainings took place at AUA and the practical part at Optomed Canada Diagnostic Eye Center.

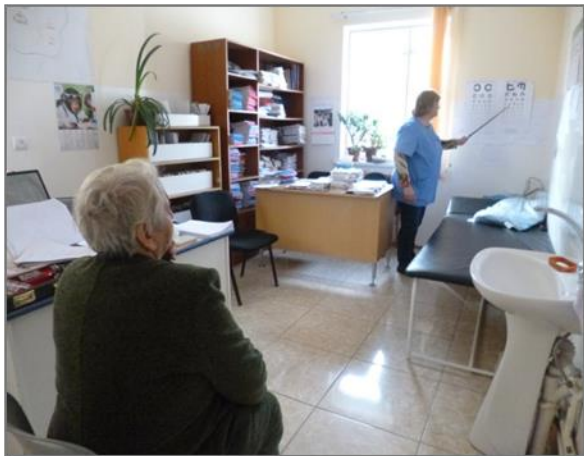
The participants were satisfied with the course and the opportunity to refresh their knowledge and skills and stay current with advances in ophthalmology. By enhancing the professional skills of ophthalmologists and ophthalmic nurses in Armenian marzes, Meghriqian Institute helps to improve the quality of ophthalmic care available to patients living in marzes and prevent avoidable blindness in Armenia.



6. Garo Meghrigian Institute for Preventive Ophthalmology launched eye screening program among diabetics in Tavush region of Armenia

In August 2016, Garo Meghrigian Institute for Preventive Ophthalmology launched eye screening program among patients with diabetes living in Tavush region of Armenia. The primary aim of this program was to provide free ophthalmic examination and eye glasses among diabetic patients with low access to the ophthalmic services. The secondary aim was to increase the awareness about diabetes and diabetic retinopathy among target population.

The staff of the Meghrigian Institute visited to the main cities of Tavush region (Dilijan, Ijevan, Berd and Noyemberyan) and their adjacent villages between August and December 2016. A total of 449 diabetics were screened: 109 were from Dilijan, 167 were from Ijevan, 92 from Noyemberyan and 81 from Berd. In addition, Meghrigian Institute distributed brochures and booklets about diabetes and diabetic retinopathy to the participants. Meghrigian Institute will distribute eye glasses to the participants from border villages of Tavush region such as Voskevan, Ptghavan, Koghb, Berdavan, Haghtanak, Bagratashen, Voskepar, Debetavan, Koti and Baghanis. Overall, 77 eye glasses will be distributed in 2017. Garo Meghrigian Institute for Preventive Ophthalmology plans to expand this program to other regions of Armenia.



7. Garo Meghrigian Institute for Preventive Ophthalmology Carried Out Eye Screening Among School Age Children in Kashatagh, Artsakh

In October 2016, the Garo Meghrigian Institute for Preventive Ophthalmology organized a project aimed at reducing the incidence of avoidable blindness and visual impairment among school children living in Kashatagh province of Artsakh. Kashatagh is one of the eight provinces of Artsakh and the largest by area. The living conditions and the situation in the health sector in Kashatagh are among the harshest in Artsakh.

Meghrigian Institute selected five schools from the list of schools in Kashatagh taking into account the number of enrolled children. The staff of the Meghrigian Institute visited Berdzor, Tsaghkaberd, Urekan and Martunashen to organize eye screenings among school age children. Overall, 453 children participated in the screening. All children diagnosed with eye pathologies received free ophthalmic consultation about their diagnosis and further treatment. Those who had refractive errors (24 children) will receive eye glasses from the Meghrigian Institute in 2017.



8. Garo Meghriyan Institute for Preventive Ophthalmology Research

Publications



Aida Giloyan, MPH, Research Associate of Meghriyan Institute, Tsovinar Harutyunyan, MPH, PhD, Assistant Professor at Gerald and Patricia Turpanjian School of Public Health, and Varduhi Petrosyan, MS, PhD, Professor and Dean of the Gerald and Patricia Turpanjian School of Public Health published an article “Risk Factors for Developing Myopia among Schoolchildren in Yerevan and Gegharkunik province, Armenia” in the peer-reviewed Journal of Ophthalmic Epidemiology. Ophthalmic Epidemiology is an internationally ranked peer-reviewed journal that publishes original research articles related to eye and vision health in the

fields of epidemiology, public health and prevention of blindness.

Visual impairment resulting from uncorrected refractive errors remains a significant public health problem worldwide. Myopia, the most common type of refractive error, is a complex trait leading to visual impairment and blinding complications. Children with a high degree of myopia are at higher risk of developing permanent visual impairment or blindness.

The study described in the article assessed the prevalence of and risk factors for myopia among schoolchildren in urban and rural areas of Armenia. This study found that the prevalence of myopia was almost twice as high among schoolchildren living in Yerevan (23.3%) compared to those living in Gegharkunik province (12.5%). Advanced age, living in Yerevan, spending over 60 minutes on daily continuous reading (reading without a break), reporting “excellent/good” school grades and having parental myopia were independent predictors of developing myopia among schoolchildren.

To prevent the progression of myopia, systematic eye screening programs should be developed for schoolchildren living in both urban and rural areas in Armenia. Increasing awareness about the influence of continuous reading on the development of myopia among school age children may prevent further progression of myopia.

The reference to the article is included below.

Giloyan A, Harutyunyan T, and Petrosyan V. Risk Factors for Developing Myopia among Schoolchildren in Yerevan and Gegharkunik Province, Armenia. Ophthalmic Epidemiology. 2016 Dec 29;1-7. doi:10.1080/09286586.2016.1257028. The article is available as “Online First” at the following link:

<http://www.tandfonline.com/eprint/Jg57BfJzHecD5TcZJxAt/full>

9. Presentation at the European Public Health Conference 2016

Aida Giloyan, MPH, Research Associate of Meghri Institute presented the study on “*Vision related quality of life among adult population living in Nagorno Karabagh*” at the European Public Health Conference in Vienna, Austria held in November 2016. The abstract was published in the European Journal of Public Health in 2016. The reference to the abstract is provided below.

Giloyan A, Harutyunyan T, Petrosyan V. Vision related quality of life among adult population living in Nagorno Karabagh. The European Journal of Public Health Nov 2016, 26 (suppl 1); DOI:10.1093/eurpub/ckw174.110,

http://eurpub.oxfordjournals.org/content/26/suppl_1/ckw174.110

10. Meghriqian institute organized outreach visits to regions of Armenia and Artsakh

Each year Meghriqian Institute organizes outreach visits to different regions of Armenia and Artsakh as part of its activities. Outreach visits aimed to provide detailed ophthalmic examinations to those who have low access to ophthalmic services. In 2016, Meghriqian Institute organized outreach visits to Gegharkunik, Tavush and Shirak regions, and Artsakh. In total, 346 adult patients underwent ophthalmic examinations. Various eye diseases were detected among screened population such as glaucoma, cataract, conjunctivitis (chronic & allergic), diabetic or hypertonic retinopathy, and eye tumor. All patients diagnosed with eye diseases received medical consultation. In addition, patients having eye disorders which needed surgical intervention or hospital care, were referred to the ROU in Sevan or the nearest hospital for further diagnosis and treatment.

11. Meghriqian Institute: 2016 in numbers

Meghriqian Institute provided eye screenings to 545 children and 1,583 adult patients in Armenia and Artsakh, and distributed 549 free eye glasses to the population in need in 2016.